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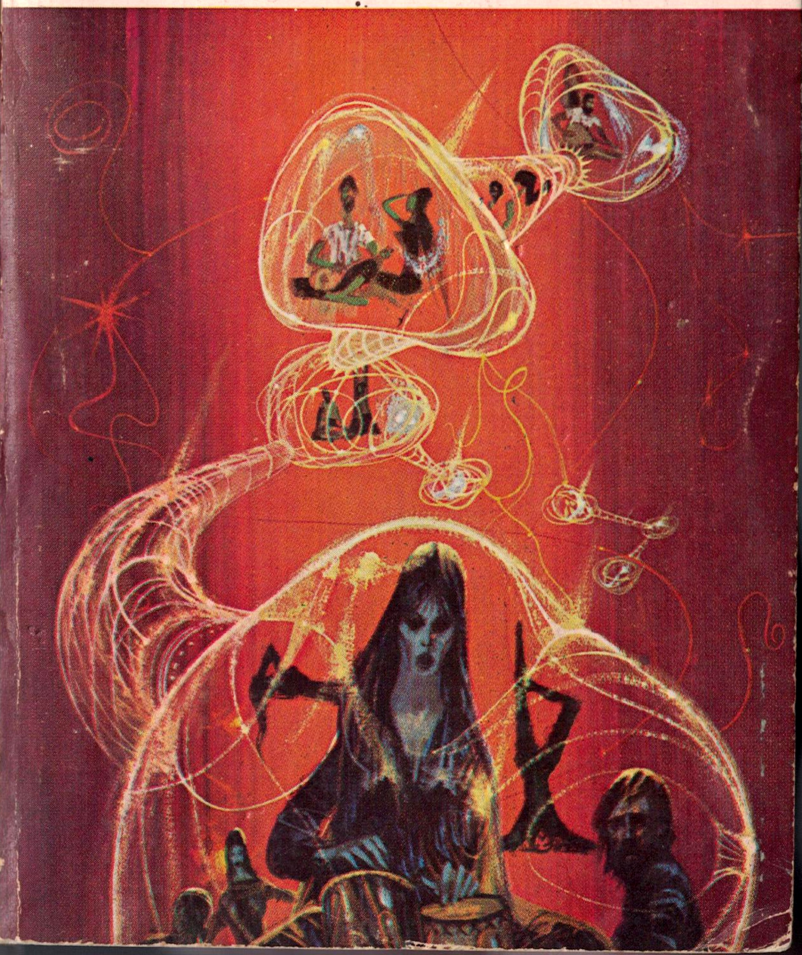
A PAIL OF AIR



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A PAIL OF AIR

Fritz Leiber

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A PAIL OF AIR

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PA had sent me out to get an extra pail of air. I'd just about scooped it full and most of the warmth had leaked from my fingers when I saw the thing.

You know, at first I thought it was a young lady. Yes, a beautiful young lady's face all glowing in the dark and looking at me from the fifth floor of the opposite apartment, which hereabouts is the floor just above the white blanket of frozen air four storeys thick. I'd never seen a live young lady before, except in the old magazines—Sis is just a kid and Ma is pretty sick and miserable—and it gave me such a start that I dropped the pail. Who wouldn't, knowing everyone on Earth was dead except Pa and Ma and Sis and you?

Even at that, I don't suppose I should have been surprised. We all see things now and then. Ma sees some pretty bad ones, to judge from the way she bugs her eyes at nothing and just screams and screams and huddles back against the blankets hanging around the Nest. Pa says it is natural we should react like that sometimes.

When I'd recovered the pail and could look again at the opposite apartment, I got an idea of what Ma might be feeling at those times, for I saw it wasn't a young lady at all but simply a light—a tiny light that moved stealthily from window to window, just as if one of the cruel little stars had come down out of the airless sky to investigate why the Earth had gone away from the Sun, and maybe to hunt down something to torment or terrify, now that the Earth didn't have the Sun's protection.

I tell you, the thought of it gave me the creeps. I just

stood there shaking, and almost froze my feet and did frost my helmet so solid on the inside that I couldn't have seen the light even if it had come out of one of the windows to get me. Then I had the wit to go back inside.

Pretty soon I was feeling my familiar way through the thirty or so blankets and rugs and rubbery sheets Pa has got hung and braced around to slow down the escape of air from the Nest, and I wasn't quite so scared. I began to hear the tick-ticking of the clocks in the Nest and knew I was getting back into air, because there's no sound outside in the vacuum, of course. But my mind was still crawly and uneasy as I pushed through the last blankets—Pa's got them faced with aluminum foil to hold in the heat—and came into the Nest.

Let me tell you about the Nest. It's low and snug, just room for the four of us and our things. The floor is covered with thick woolly rugs. Three of the sides are blankets, and the blankets roofing it touch Pa's head. He tells me it's inside a much bigger room, but I've never seen the real walls or ceiling.

Against one of the blanket-walls is a big set of shelves, with tools and books and other stuff, and on top of it a whole row of clocks. Pa's very fussy about keeping them wound. He says we must never forget time, and without a sun or moon, that would be easy to do.

The fourth wall has blankets all over except around the fireplace, in which there is a fire that must never go out. It keeps us from freezing and does a lot more besides. One of us must always watch it. Some of the clocks are alarm and we can use them to remind us. In the early days there was only Ma to take turns with Pa—I think of that when she gets difficult—but now there's me to help, and Sis too.

It's Pa who is the chief guardian of the fire, though. I always think of him that way: a tall man sitting cross-legged, frowning anxiously at the fire, his lined face golden in its light, and every so often carefully placing on it a piece of coal from the big heap beside it. Pa tells me there used to be guardians of the fire sometimes in the very old days—vestals, he calls them—although there was unfrozen

air all around then and a sun too and you didn't really need a fire.

He was sitting just that way now, though he got up quick to take the pail from me and bawl me out for loitering—he'd spotted my frozen helmet right off. That roused Ma and she joined in picking on me. She's always trying to get the load off her feelings, Pa explains. He shut her up pretty fast. Sis let off a couple of silly squeals too.

Pa handled the pail of air in a twist of cloth. Now that it was inside the Nest, you could really feel its coldness. It just seemed to suck the heat out of everything. Even the flames cringed away from it as Pa put it down close by the fire.

Yet it's that glimmery blue-white stuff in the pail that keeps us alive. It slowly melts and vanishes and refreshes the Nest and feeds the fire. The blankets keep it from escaping too fast. Pa'd like to seal the whole place, but he can't—building's too earthquake-twisted, and besides he has to leave the chimney open for smoke. But the chimney has special things Pa calls baffles up inside it, to keep the air from getting out too quick that way. Sometimes Pa, making a joke, says it baffles him they keep on working, or work at all.

Pa says air is tiny molecules that fly away like a flash if there isn't something to stop them. We have to watch sharp not to let the air run low. Pa always keeps a big reserve supply of it in buckets behind the first blankets, along with extra coal and cans of food and bottles of vitamins and other things, such as pails of snow to melt for water. We have to go way down to the bottom floor for that stuff, which is a mean trip, and get it through a door to outside.

You see, when the Earth got cold, all the water in the air froze first and made a blanket ten feet thick or so everywhere, and then down on top of that dropped the crystals of frozen air, making another mostly white blanket sixty or seventy feet thick maybe.

Of course, all the parts of the air didn't freeze and snow down at the same time.

First to drop out was the carbon dioxide—when you're shoveling for water, you have to make sure you don't go

too high and get any of that stuff mixed in, for it would put you to sleep, maybe for good, and make the fire go out. Next there's the nitrogen, which doesn't count one way or the other, though it's the biggest part of the blanket. On top of that and easy to get at, which is lucky for us, there's the oxygen that keeps us alive. It's pale blue, which helps you tell it from the nitrogen. It has to be colder for oxygen to freeze solid than nitrogen. That's why the oxygen snowed down last.

Pa says we live better than kings ever did, breathing pure oxygen, but we're used to it and don't notice.

Finally, at the very top, there's a slick of liquid helium, which is funny stuff.

All of these gases are in neat separate layers. Like a pussy caffay, Pa laughingly says, whatever that is.

I was busting to tell them all about what I'd seen, and so as soon as I'd ducked out of my helmet and while I was still climbing out of my suit, I cut loose. Right away Ma got nervous and began making eyes at the entry-slit in the blankets and wringing her hands together—the hand where she'd lost three fingers from frostbite inside the good one, as usual. I could tell that Pa was annoyed at me scaring her and wanted to explain it all away quickly, yet I knew he knew I wasn't fooling.

"And you watched this light for some time, son?" he asked when I finished.

I hadn't said anything about first thinking it was a young lady's face. Somehow that part embarrassed me.

"Long enough for it to pass five windows and go to the next floor."

"And it didn't look like stray electricity or crawling liquid or starlight focused by a growing crystal, or anything like that?"

He wasn't just making up those ideas. Odd things happen in a world that's about as cold as can be, and just when you think matter would be frozen dead, it takes on a strange new life. A slimy stuff comes crawling toward the Nest, just like an animal snuffing for heat—that's the liquid helium. And once, when I was little, a bolt of lightning—

not even Pa could figure where it came from—hit the nearby steeple and crawled up and down it for weeks, until the glow finally died.

"Not like anything I ever saw," I told him.

He stood for a moment frowning. Then, "I'll go out with you, and you show it to me," he said.

Ma raised a howl at the idea of being left alone, and Sis joined in, too, but Pa quieted them. We started climbing into our outside clothes—mine had been warming by the fire. Pa made them. They have triple-pane plastic headpieces that were once big double-duty transparent food cans, but they keep heat and air in and can replace the air for a little while, long enough for our trips for water and coal and food and so on.

Ma started moaning again, "I've always known there was something outside there, waiting to get us. I've felt it for years—something that's part of the cold and hates all warmth and wants to destroy the Nest. It's been watching us all this time, and now it's coming after us. It'll get you and then come for me. Don't go, Harry!"

Pa had everything on but his helmet. He knelt by the fireplace and reached in and shook the long metal rod that goes up the chimney and knocks off the ice that keeps trying to clog it. Once a week he goes up on the roof to check if it's working all right. That's our worst trip and Pa won't let me make it alone.

"Sis," Pa said quietly, "come watch the fire. Keep an eye on the air, too. If it gets low or doesn't seem to be boiling fast enough, fetch another bucket from behind the blanket. But mind your hands. Use the cloth to pick up the bucket."

Sis quit helping Ma be frightened and came over and did as she was told. Ma quieted down pretty suddenly, though her eyes were still kind of wild as she watched Pa fix on his helmet tight and pick up a pail and the two of us go out.

Pa led the way and I took hold of his belt. It's a funny thing, I'm not afraid to go by myself, but when Pa's along

I always want to hold on to him. Habit, I guess, and then there's no denying that this time I was a bit scared.

You see, it's this way. We know that everything is dead out there. Pa heard the last radio voices fade away years ago, and had seen some of the last folks die who weren't as lucky or well-protected as us. So we knew that if there was something groping around out there, it couldn't be anything human or friendly.

Besides that, there's a feeling that comes with it always being night, *cold* night. Pa says there used to be some of that feeling even in the old days, but then every morning the Sun would come and chase it away. I have to take his word for that, not ever remembering the Sun as being anything more than a big star. You see, I hadn't been born when the dark star snatched us away from the Sun, and by now it's dragged us out beyond the orbit of the planet Pluto, Pa says, and taking us farther out all the time.

We can see the dark star as it crosses the sky because it blots out stars, and especially when it's outlined by the Milky Way. It's pretty big, for we're closer to it than the planet Mercury was to the Sun, Pa says, but we don't care to look at it much and Pa won't set his clocks by it.

I found myself wondering whether there mightn't be something on the dark star that wanted us, and if that was why it had captured the Earth. Just then we came to the end of the corridor and I followed Pa out on the balcony.

I don't know what the city looked like in the old days, but now it's beautiful. The starlight lets you see it pretty well—there's quite a bit of light in those steady points speckling the blackness above. (Pa says the stars used to twinkle once, but that was because there was air.) We are on a hill and the shimmery plain drops away from us and then flattens out, cut up into neat squares by the troughs that used to be streets. I sometimes make my mashed potatoes look like it, before I pour on the gravy.

Some taller buildings push up out of the feathery plain, topped by rounded caps of air crystals, like the fur hood Ma wears, only whiter. On those buildings you can see the darker squares of windows, underlined by white dashes of

air crystals. Some of them are on a slant, for many of the buildings are pretty badly twisted by the quakes and all the rest that happened when the dark star captured the Earth.

Here and there a few icicles hang, water icicles from the first days of the cold, other icicles of frozen air that melted on the roofs and dropped and froze again. Sometimes one of those icicles will catch the light of a star and send it to you so brightly you think the star has swooped into the city. That was one of the things Pa had been thinking of when I told him about the light, but I had thought of it myself first and known it wasn't so.

He touched his helmet to mine so we could talk easier and he asked me to point out the windows to him. But there wasn't any light moving around inside them now, or anywhere else. To my surprise, Pa didn't bawl me out and tell me I'd been seeing things. He looked all around quite a while after filling his pail, and just as we were going inside he whipped around without warning, as if to take some peeping thing off guard.

I could feel it, too. The old peace was gone. There was something lurking out there, watching, waiting, getting ready.

Inside, he said to me, touching helmets, "If you see something like that again, son, don't tell the others. Your Ma's sort of nervous these days and we owe her all the feeling of safety we can give her. Once—it was when your sister was born—I was ready to give up and die, but your Mother kept me trying. Another time she kept the fire going a whole week all by herself when I was sick. Nursed me and took care of two of you, too.

"You know that game we sometimes play, sitting in a square in the Nest, tossing a ball around? Courage is like a ball, son. A person can hold it only so long, and then he's got to toss it to someone else. When it's tossed your way, you've got to catch it and hold it tight—and hope there'll be someone else to toss it to when you get tired of being brave."

His talking to me that way made me feel grown-up and

good. But it didn't wipe away the thing outside from the back of my mind—or the fact that Pa took it seriously.

It's hard to hide your feelings about such a thing. When we got back in the Nest and took off our outside clothes, Pa laughed about it all and told them it was nothing and kidded me for having such an imagination, but his words fell flat. He didn't convince Ma and Sis any more than he did me. It looked for a minute like we were all fumbling the courage-ball. Something had to be done, and almost before I knew what I was going to say, I heard myself asking Pa to tell us about the old days, and how it all happened.

He sometimes doesn't mind telling that story, and Sis and I sure like to listen to it, and he got my idea. So we were all settled around the fire in a wink, and Ma pushed up some cans to thaw for supper, and Pa began. Before he did, though, I noticed him casually get a hammer from the shelf and lay it down beside him.

It was the same old story as always—I think I could recite the main thread of it in my sleep—though Pa always puts in a new detail or two and keeps improving it in spots.

He told us how the Earth had been swinging around the Sun ever so steady and warm, and the people on it fixing to make money and wars and have a good time and get power and treat each other right or wrong, when without warning there comes charging out of space this dead star, this burned out sun, and upsets everything.

You know, I find it hard to believe in the way those people felt, any more than I can believe in the swarming number of them. Imagine people getting ready for the horrible sort of war they were cooking up. Wanting it even, or at least wishing it were over so as to end their nervousness. As if all folks didn't have to hang together and pool every bit of warmth just to keep alive. And how can they have hoped to end danger, any more than we can hope to end the cold?

Sometimes I think Pa exaggerates and makes things out too black. He's cross with us once in a while and was

probably cross with all those folks. Still, some of the things I read in the old magazines sound pretty wild. He may be right.

The dark star, as Pa went on telling it, rushed in pretty fast and there wasn't much time to get ready. At the beginning they tried to keep it a secret from most people, but then the truth came out, what with the earthquakes and floods—imagine, oceans of *unfrozen* water!—and people seeing stars blotted out by something on a clear night. First off they thought it would hit the Sun, and then they thought it would hit the Earth. There was even the start of a rush to get to a place called China, because people thought the star would hit on the other side. Not that that would have helped them, they were just crazy with fear. But then they found it wasn't going to hit either side, but was going to come very close to the Earth.

Most of the other planets were on the other side of the Sun and didn't get involved. The Sun and the newcomer fought over the Earth for a little while—pulling it this way and that, in a twisty curve, like two dogs growling over a bone, Pa described it this time—and then the newcomer won and carried us off. The Sun got a consolation prize, though. At the last minute he managed to hold on to the Moon.

That was the time of the monster earthquakes and floods, twenty times worse than anything before. It was also the time of the Big Swoop, as Pa calls it, when the Earth speeded up, going into a close orbit around the dark star.

I've asked Pa, wasn't the Earth yanked then, just as he has done to me sometimes, grabbing me by the collar to do it, when I've been sitting too far from the fire. But Pa says no, gravity doesn't work that way. It was like a yank, but nobody felt it. I guess it was like being yanked in a dream.

You see, the dark star was going through space faster than the Sun, and in the opposite direction, and it had to speed up the world a lot in order to take it away.

The Big Swoop didn't last long. It was over as soon as

the Earth was settled down in its new orbit around the dark star. But the earthquakes and floods were terrible while it lasted, twenty times worse than anything before. Pa says that all sorts of cliffs and buildings toppled, oceans slopped over, swamps and sandy deserts gave great sliding surges that buried nearby lands. Earth's blanket of air, still up in the sky then, was stretched out and got so thin in spots that people keeled over and fainted—though of course, at the same time, they were getting knocked down by the earthquakes that went with the Big Swoop and maybe their bones broke or skulls cracked.

We've often asked Pa how people acted during that time, whether they were scared or brave or crazy or stunned, or all four, but he's sort of leery of the subject, and he was again tonight. He says he was mostly too busy to notice.

You see, Pa and some scientist friends of his had figured out part of what was going to happen—they'd known we'd get captured and our air would freeze—and they'd been working like mad to fix up a place with airtight walls and doors, and insulation against the cold, and big supplies of food and fuel and water and bottled air. But the place got smashed in the last earthquakes and all Pa's friends were killed then and in the Big Swoop. So he had to start over and throw the Nest together quick without any advantages, just using any stuff he could lay his hands on.

I guess he's telling pretty much the truth when he says he didn't have any time to keep an eye on how other folks behaved, either then or in the Big Freeze that followed—followed very quick, you know, both because the dark star was pulling us away very fast and because Earth's rotation had been slowed by the tug-of-war and the tides, so that the nights were longer.

Still, I've got an idea of some of the things that happened from the frozen folk I've seen, a few of them in other rooms in our building, others clustered around the furnaces in the basements where we go for coal.

In one of the rooms, an old man sits stiff in a chair, with an arm and a leg in splints. In another, a man and woman are huddled together in a bed with heaps of covers

over them. You can just see their heads peeking out, close together. And in another a beautiful young lady is sitting with a pile of wraps huddled around her, looking hopefully toward the door, as if waiting for someone who never came back with warmth and food. They're all still and stiff as statues, of course, but just like life.

Pa showed them to me once in quick winks of his flashlight, when he still had a fair supply of batteries and could afford to waste a little light. They scared me pretty bad and made my heart pound, especially the young lady.

Now, with Pa telling his story for the umpteenth time to take our minds off another scare, I got to thinking of the frozen folk again. All of a sudden I got an idea that scared me worse than anything yet. You see, I'd just remembered the face I'd thought I'd seen in the window. I'd forgotten about that on account of trying to hide it from the others.

What, I asked myself, if the frozen folk were coming to life? What if they were like the liquid helium that got a new lease on life and started crawling toward the heat just when you thought its molecules ought to freeze solid forever? Or like the electricity that moves endlessly when it's just about as cold as that? What if the ever-growing cold, with the temperature creeping down the last few degrees to the last zero, had mysteriously wakened the frozen folk to life—not warm-blooded life, but something icy and horrible?

That was a worse idea than the one about something coming down from the dark star to get us.

Or maybe, I thought, both ideas might be true. Something coming down from the dark star and making the frozen folk move, using them to do its work. That would fit with both things I'd seen—the beautiful young lady and the moving, starlike light.

The frozen folk with minds from the dark star behind their unwinking eyes, creeping, crawling, snuffing their way, following the heat to the Nest, maybe wanting the heat, but more likely hating it and wanting to chill it forever, snuff out our fire.

I tell you, that thought gave me a very bad turn and I wanted very badly to tell the others my fears, but I remembered what Pa had said and clenched my teeth and didn't speak.

We were all sitting very still. Even the fire was burning silently. There was just the sound of Pa's voice and the clocks.

And then, from beyond the blankets, I thought I heard a tiny noise. My skin tightened all over me.

Pa was telling about the early years in the Nest and had come to the place where he philosophizes.

"So I asked myself then," he said, "what's the use of dragging it out for a few years? Why prolong a doomed existence of hard work and cold and loneliness? The human race is done. The Earth is done. Why not give up, I asked myself—and all of a sudden I got the answer."

Again I heard the noise, louder this time, a kind of uncertain, shuffling tread, coming closer. I couldn't breathe.

"Life's always been a business of working hard and fighting the cold," Pa was saying. "The earth's always been a lonely place, millions of miles from the next planet. And no matter how long the human race might have lived, the end would have come some night. Those things don't matter. What matters is that life is good. It has a lovely texture, like some thick fur or the petals of flowers—you've never seen those, but you know our ice-flowers—or like the texture of flames, never twice the same. It makes everything else worth while. And that's as true for the last man as the first."

And still the steps kept shuffling closer. It seemed to me that the inmost blanket trembled and bulged a little. Just as if they were burned into my imagination, I kept seeing those peering, frozen eyes.

"So right then and there," Pa went on, and now I could tell that he heard the steps, too, and was talking loud so we maybe wouldn't hear them, "right then and there I told myself that I was going on as if we had all eternity ahead of us. I'd have children and teach them all I could. I'd get them to read books. I'd plan for the future, try to enlarge and seal the Nest. I'd do what I could to keep

everything beautiful and growing. I'd keep alive my feeling of wonder even at the cold and the dark and the distant stars."

But then the blanket actually did move and lift. And there was a bright light somewhere behind it. Pa's voice stopped and his eyes turned to the widening slit and his hand went out until it touched and gripped the handle of the hammer beside him.

In through the blanket stepped the beautiful young lady. She stood there looking at us the strangest way, and she carried something bright and unwinking in her hand. And two other faces peered over her shoulders—men's faces, white and staring.

Well, my heart couldn't have been stopped for more than four or five beats before I realized she was wearing a suit and helmet like Pa's homemade ones, only fancier, and that the men were, too—and that the frozen folk certainly wouldn't be wearing those. Also, I noticed that the bright thing in her hand was just a kind of flashlight.

Sinking down very softly, Ma fainted.

The silence kept on while I swallowed hard a couple of times, and after that there was all sorts of jabbering and commotion.

They were simply people, you see. We hadn't been the only ones to survive; we'd just thought so, for natural enough reasons. These three people had survived, and quite a few others with them. And when we found out *how* they'd survived, Pa let out the biggest whoop of joy.

They were from Los Alamos and they were getting their heat and power from atomic energy. Just using the uranium and plutonium intended for bombs, they had enough to go on for thousands of years. They had a regular little airtight city, with airlocks and all. They even generated electric light and grew plants and animals by it. (At this Pa let out a second whoop, waking Ma from her faint.)

But if we were flabbergasted at them, they were double-flabbergasted at us.

One of the men kept saying, "But it's impossible, I tell

you. You can't maintain an air supply without hermetic sealing. It's simply impossible."

That was after he had got his helmet off and was using our air. Meanwhile, the young lady kept looking around at us as if we were saints, and telling us we'd done something amazing, and suddenly she broke down and cried.

They'd been scouting around for survivors, but they never expected to find any in a place like this. They had rocket ships at Los Alamos and plenty of chemical fuel. As for liquid oxygen, all you had to do was go out and shovel the air blanket at the top level. So after they'd got things going smoothly at Los Alamos, which had taken years, they'd decided to make some trips to likely places where there might be other survivors. No good trying long-distance radio signals, of course, since there was no atmosphere, no ionosphere, to carry them around the curve of the Earth. That was why all the radio signals had died out.

Well, they'd found other colonies at Argonne and Brookhaven and way around the world at Harwell and Tanna Tuva. And now they'd been giving our city a look, not really expecting to find anything. But they had an instrument that noticed the faintest heat waves and it had told them there was something warm down here, so they'd landed to investigate. Of course we hadn't heard them land, since there was no air to carry the sound, and they'd had to investigate around quite a while before finding us. Their instruments had given them a wrong steer and they'd wasted some time in the building across the street.

By now, all five adults were talking like sixty. Pa was demonstrating to the men how he worked the fire and got rid of the ice in the chimney and all that. Ma had perked up wonderfully and was showing the young lady her cooking and sewing stuff, and even asking about how the women dressed at Los Alamos. The strangers marveled at everything and praised it to the skies. I could tell from the way they wrinkled their noses that they found the Nest a bit smelly, but they never mentioned that at all and just asked bushels of questions.

In fact, there was so much talking and excitement that Pa forgot about things, and it wasn't until they were all getting groggy that he looked and found the air had all boiled away in the pail. He got another bucket of air quick from behind the blankets. Of course that started them all laughing and jabbering again. The newcomers even got a little drunk. They weren't used to so much oxygen.

Funny thing, though—I didn't do much talking at all and Sis hung on to Ma all the time and hid her face when anybody looked at her. I felt pretty uncomfortable and disturbed myself, even about the young lady. Glimpsing her outside there, I'd had all sorts of mushy thoughts, but now I was just embarrassed and scared of her, even though she tried to be nice as anything to me.

I sort of wished they'd all quit crowding the Nest and let us be alone and get our feelings straightened out.

And when the newcomers began to talk about our all going to Los Alamos, as if that were taken for granted, I could see that something of the same feeling struck Pa and Ma, too. Pa got very silent all of a sudden and Ma kept telling the young lady, "But I wouldn't know how to act there and I haven't any clothes."

The strangers were puzzled like anything at first, but then they got the idea. As Pa kept saying, "It just doesn't seem right to let this fire go out."

Well, the strangers are gone, but they're coming back. It hasn't been decided yet just what will happen. Maybe the Nest will be kept up as what one of the strangers called a "survival school." Or maybe we will join the pioneers who are going to try to establish a new colony at the uranium mines at Great Slave Lake or in the Congo.

Of course, now that the strangers are gone, I've been thinking a lot about Los Alamos and those other tremendous colonies. I have a hankering to see them for myself.

You ask me, Pa wants to see them, too. He's been getting pretty thoughtful, watching Ma and Sis perk up.

"It's different, now that we know others are alive," he explains to me. "Your mother doesn't feel so hopeless any

more. Neither do I, for that matter, not having to carry the whole responsibility for keeping the human race going, so to speak. It scares a person."

I looked around at the blanket walls and the fire and the pails of air boiling away and Ma and Sis sleeping in the warmth and the flickering light.

"It's not going to be easy to leave the Nest," I said, wanting to cry, kind of. "It's so small and there's just the four of us. I get scared at the idea of big places and a lot of strangers."

He nodded and put another piece of coal on the fire. Then he looked at the little pile and grinned suddenly and put a couple of handfuls on, just as if it was one of our birthdays or Christmas.

"You'll quickly get over that feeling, son," he said. "The trouble with the world was that it kept getting smaller and smaller, till it ended with just the Nest. Now it'll be good to start building up to a real huge world again, the way it was in the beginning."

I guess he's right. You think the beautiful young lady will wait for me till I grow up? I asked her that and she smiled to thank me and then she told me she's got a daughter almost my age and that there are lots of children at the atomic places. Imagine that.

THE BEAT CLUSTER

WHEN the eviction order arrived, Fats Jordan was hanging in the center of the Big Glass Balloon, hugging his guitar to his massive black belly above his purple shorts.

The Big Igloo, as the large living-globe was more often called, was not really made of glass. It was sealingsilk, a cheap flexible material almost as transparent as fused silica and ten thousand times tougher—quite tough enough to hold a breathable pressure of air in the hard vacuum of space.

Beyond the spherical wall loomed the other and somewhat smaller balloons of the Beat Cluster, connected to each other and to the Big Igloo by three-foot-diameter cylindrical tunnels of triple-strength tinted sealingsilk. In them floated or swam about an assemblage of persons of both sexes in informal dress and undress and engaged in activities suitable to freefall: sleeping, sunbathing, algae tending ("rocking" spongy cradles of water, fertilizer and the green scummy "guk"), yeast culture (a rather similar business), reading, studying, arguing, stargazing, meditation, space-squash (played inside the globular court of an empty balloon), dancing, artistic creation in numerous media and the production of sweet sound (musical instruments don't depend on gravity).

Attached to the Beat Cluster by two somewhat larger sealingsilk tunnels and blocking off a good eighth of the inky, star-speckled sky, was the vast trim aluminum bulk of Research Satellite One, dazzling now in the untempered sunlight.

It was mostly this sunlight reflected by the parent satellite, however, that now illuminated Fats Jordan and the

other "floaters" of the Beat Cluster. A huge sun-quilt was untidily spread (staying approximately where it was put, like all objects in freefall) against most of the inside of the Big Igloo away from the satellite. The sun-quilt was a patchwork of colors and materials on the inward side, but silvered on the outward side, as turned-over edges and corners showed. Similar "Hollywood Blankets" protected the other igloos from the undesirable heating effects of too much sunlight and, of course, blocked off the sun's disk from view.

Fats, acting as Big Daddy of the Space Beats, received the eviction order with thoughtful sadness.

"So we all of us gotta go down *there*?"

He jerked a thumb at the Earth, which looked about as big as a basketball held at arms-length, poised midway between the different silvers of the sun-quilt margin and the satellite. Dirty old Terra was in half phase: wavery blues and browns toward the sun, black away from it except for the tiny nebulous glows of a few big cities.

"That is correct," the proctor of the new Resident Civilian Administrator replied through thin lips. The new proctor was a lean man in silvery gray blouse, Bermuda shorts and moccasins. His hair was precision clipped—a quarter-inch blond lawn. He looked almost unbearably neat and hygienic contrasted with the sloppy long-haired floaters around him. He almost added, "and high time, too," but he remembered that the Administrator had enjoined him to be tactful—"firm, but tactful." He did not take this suggestion as including his nose, which had been wrinkled ever since he had entered the igloos. It was all he could do not to hold it shut with his fingers. Between the overcrowding and the loathsome Chinese gardening, the Beat Cluster *stank*.

And it was dirty. Even the satellite's precipitrons, working over the air withdrawn from the Beat Cluster via the exhaust tunnel, couldn't keep pace with the new dust. Here and there a film of dirt on the sealingsilk blurred the starfields. And once the proctor thought he saw the film *crawl*.

Furthermore, at the moment Fats Jordan was upside-down to the proctor, which added to the latter's sense of the unfitness of things. Really, he thought, these beat types were the curse of space. The sooner they were out of it the better.

"Man," Fats said mournfully, "I never thought they were going to enforce those old orders."

"The new Administrator has made it his first official act," the proctor said, smiling leanly. He went on, "The supply rocket was due to make the down-jump empty this this morning, but the Administrator is holding it. There is room for fifty of your people. We will expect that first contingent at the boarding tube an hour before nightfall."

Fats shook his head mournfully and said, "Gonna be a pang, leavin' space."

His remark was taken up and echoed by various individuals spotted about in the Big Igloo.

"It's going to be a dark time," said Knave Grayson, merchant spaceman and sun-worshipper. Red beard and sheath-knife at his belt made him look like a pirate. "Do you realize the nights average twelve hours down there instead of two? And there are days when you never see Sol?"

"Gravity yoga will be a trial after freefall yoga," Guru Ishpingham opined, shifting from padmasana to a position that put his knees behind his ears in a fashion that made the proctor look away. The tall, though presently much folded and intertwined, Briton was as thin as Fats Jordan was stout. (In space the number of thins and fats tends to increase sharply, as neither overweight nor under-musculature carries the penalties it does on the surface of a planet.)

"And mobiles will be trivial after space stabiles," Erica Janes threw under her shoulder. The husky sculptress had just put the finishing touches to one of her three-dimensional free montages—an arrangement of gold, blue and red balls—and was snapping a stereophoto of it. "What really hurts," she added, "is that our kids will have to try to comprehend Newton's Three Laws of Motion in an

environment limited by a gravity field. Elementary physics should never be taught anywhere except in freefall."

"No more space diving, no more water sculpture, no more vacuum chemistry," chanted the Brain, fourteen-year-old fugitive from a brilliant but several times broken home down below.

"No more space pong, no more space pool," chimed in the Brainess, his sister. (Space billiards is played on the inner surface of a balloon smaller than that used for space-squash. The balls, when properly cued, follow it by reason of their slight centrifugal force.)

"Ah well, we all knew this bubble would someday burst," Gussy Friml summed up, pinwheeling lazily in her black leotards. (There is something particularly beautiful about girls in space, where gravity doesn't tug at their curves. Even fat folk don't sag in freefall. Luscious curves become truly remarkable.)

"*Yes!*" Knave Grayson agreed savagely. He'd seemed lost in brooding since his first remarks. Now as if he'd abruptly reached conclusions, he whipped out his knife and drove it through the taut sealingsilk at his elbow.

The proctor knew he shouldn't have winced so convulsively. There was only the briefest whistle of escaping air before the edge-tension in the sealingsilk closed the hole with an audible *snap*.

Knave smiled wickedly at the proctor. "Just testing," he explained. "I knew a roustabout who lost a foot stepping through sealingsilk. Edge-tension cut it off clean at the ankle. The foot's still orbiting around the satellite, in a brown boot with needle-sharp hobnails. This is one spot where a boy's got to remember not to put his finger in the dike."

At that moment Fats Jordan, who'd seemed lost in brooding too, struck a chilling but authoritative chord on his guitar.

"Gonna be a *pang*
"Leavin' space," (he sang)
"Gonna be a *pang!*"

The proctor couldn't help wincing again. "That's all very well," he said sharply, "and I'm glad you're taking this realistically. But hadn't you better be getting a move on?"

Fats Jordan paused with his hand above the strings. "How do you mean, Mister Proctor?" he asked.

"I mean getting your first fifty ready for the down jump!"

"Oh, that," Fats said and paused reflectively. "Well, now, Mr. Proctor, that's going to take a little time."

The proctor snorted. "Two hours!" he said sharply and, grabbing at the nylon line he'd had the foresight to trail into the Beat Cluster behind him (rather like Theseus venturing into the Minotaur's probably equally smelly labyrinth), he swiftly made his way out of the Big Igloo, hand over hand, by way of the green tunnel.

The Brainess giggled. Fats frowned at her solemnly. The giggling was cut off. To cover her embarrassment the Brainess began to hum the tune to one of her semi-private songs:

"Eskimos of space are we
"In our igloos falling free.
"We are space's Esquimaux,
"Fearless vacuum-chewing hawks."

Fats tossed Gussy his guitar, which set him spinning very slowly. As he rotated, precessing a little, he ticked off points to his comrades on his stubby, ripe-banana-clustered fingers.

"Somebody gonna have to tell the research boys we're callin' off the art show an' the ballet an' terminatin' jazz Fridays. Likewise the Great Books course an' Saturday poker. Might as well inform our friends of Edison and Convair at the same time that they're gonna have to hold the 3D chess and 3D go tournaments at their place, unless they can get the new Administrator to donate them our quarters when we leave—which I doubt. I imagine he'll tote the Cluster off a ways and use the igloos for target

practice. With the self-sealin' they should hold shape a long time.

"But don't exactly tell the research boys when we're goin' or why. Play it mysterioso.

"Meanwhile the gals gotta start sewin' us some ground clothes. Warm *and* decent. And we all gotta get our papers ready for the customs men, though I'm afraid most of us ain't kept nothin' but Davis passports. Heck, some of you are probably here on Nansen passports.

"An' we better pool our credits to buy wheelchairs and dollies groundside for such of us as are gonna need 'em." Fats looked back and forth dolefully from Guru Ishpingham's interwoven emaciation to his own hyper-portliness.

Meanwhile a space-diver had approached the Big Igloo from the direction of the satellite, entered the folds of a limp blister, zipped it shut behind him and unzipped the slit leading inside. The blister filled with a dull *pop* and the diver pushed inside through the lips. With a sharp effort he zipped them shut behind him, then threw back his helmet.

"Condition Red!" he cried. "The new Administrator's planning to ship us all groundside! I got it straight from the Police Chief. The new A's taking those old deportation orders seriously and he's holding the—"

"We know all about that, Trace Davis," Fats interrupted him. "The new A's proctor's been here."

"Well, what are you going to *do* about it?" the other demanded.

"Nothin'," Fats serenely informed the flushed and shock-headed diver. "We're complyin'. You, Trace—" he pointed a finger—"get out of that suit. We're auctionin' it off 'long with all the rest of our unworldly goods. The research boys'll be eager to bid on it. For fun-diving our spacesuits are the pinnacle."

A carrot-topped head thrust out of the blue tunnel. "Hey, Fats, we're broadcasting," its freckled owner called accusingly. "You're on in thirty seconds!"

"Baby, I clean forgot," Fats said. He sighed and shrugged. "Guess I gotta tell our downside fans the in-

glorious news. Remember all my special instructions, chillun. Share 'em out among you." He grabbed Gussy Friml's black ankle as it swung past him and shoved off on it, coasting toward the blue tunnel at about one fifth the velocity with which Gussy receded from him in the opposite direction.

"Hey, Fats," Gussy called to him as she bounced gently off the sun-quilt, "you got any general message for us?"

"Yeah," Fats replied, still rotating as he coasted and smiling as he rotated. "Make more guk, chillun. Yeah," he repeated as he disappeared into the blue tunnel, "take off the growth checks an' make mo' guk."

Seven seconds later he was floating beside the spherical mike of the Beat Cluster's shortwave station. The bright instruments and heads of the Small Jazz Ensemble were all clustered in, sounding a last chord, while their foreshortened feet waved around the periphery. The half dozen of them, counting Fats, were like friendly fish nosing up to the single black olive of the mike. Fats had his eyes on the Earth, a little more than half night now and about as big as the snare drum standing out from the percussion rack Jordy had his legs scissored around. It was good, Fats thought, to see who you were talking to.

"Greetings, groundsiders," he said softly when the last echo had come back from the sealingsilk and died in the sun-quilt. "This is that ever-hateful voice from outer space, the voice of your old tormentor Fats Jordan, advertising no pickle juice." Fats actually said "advertising," not "advertisin'"—his diction always improved when he was on vacuum.

"And for a change, folks, I'm going to take this space to tell you something about us. No jokes this time, just tedious talk. I got a reason, a real serious reason, but I ain't saying what it is for a minute."

He continued, "You look mighty cozy down there, mighty cozy from where we're floating. Because we're way out here, you know. Out of this world, to quote the man. A good twenty thousand miles out, Captain Nemo.

"Or we're up here, if it sounds better to you that way.

Way over your head. Up here with the stars and the flaming sun and the hot-cold vacuum, orbiting around Earth in our crazy balloons that look like a cluster of dingy glass grapes."

The band had begun to blow softly again, weaving a cool background to Fat's lazy phrases.

"Yes, the boys and girls are in space now, groundsiders. We've found the cheap way here, the back door. The wild ones who yesterday would have headed for the Village or the Quarter or Big Sur, the Left Bank or North Beach, or just packed up their Zen Buddhism and hit the road, are out here now, digging cool sounds as they fall round and round Dear Old Dirty. And folks, ain't you just a little glad we're gone?"

The band coasted into a phrase that was like the lazy swing of a hammock.

"Our cold-water flats have climbed. Our lofts have gone aloft. We've cut our pads loose from the cities and floated them above the stratosphere. It was a stiff drag for our motorcycles, Dad, but we made it. And ain't you a mite delighted to be rid of us? I know we're not all up here. But the worst of us are.

"You know, people once pictured the conquest of space entirely in terms of military outposts and machine precision." Here Burr's trumpet blew a crooked little battle cry. "They didn't leave any room in their pictures for the drifters and dreamers, the rebels and no-goods (like me, folks!) who are up here right now, orbiting with a few pounds of oxygen and a couple of gobs of guk (and a few cockroaches, sure, and maybe even a few mice, though we keep a cat) inside a cluster of smelly old balloons.

"That's a laugh in itself: the antique vehicle that first took man off the ground also being the first to give him cheap living quarters outside the atmosphere. Primitive balloons floated free in the grip of the wind; we fall free in the clutch of gravity. A balloon's a symbol, you know, folks. A symbol of dreams and hopes and easily-punctured illusions. Because a balloon's a kind of bubble. But bubbles can be tough."

Led by Jordy's drums, the band worked into the Blue Ox theme from the Paul Bunyan Suite.

"Tough the same way the hemlock tents and sod huts of the American settlers were tough. We got out into space, a lot of us did, the same way the Irish and Finns got west. They built the long railroads. We built the big satellites."

Here the band shifted to the Axe theme.

"I was a welder myself. I came into space with a bunch of other galoots to help stitch together Research Satellite One. I didn't like the barracks they put us in, so I made myself a little private home of sealingsilk, a material which then was used only for storing liquids and gases —nobody'd even thought of it for human habitation. I started to meditate there in my bubble and I came to grips with a few half-ultimates and I got to like it real well in space. Same thing happened to a few of the other galoots. You know, folks, a guy who's wacky enough to wrestle sheet aluminum in vacuum in a spider suit may very well be wacky enough to get to really like stars and weightlessness and all the rest of it.

"When the construction job was done and the big research outfits moved in, we balloon men stayed on. It took some wangling but we managed. We weren't costing the Government much. And it was mighty convenient for them to have us around for odd jobs.

"That was the nucleus of our squatter cluster. The space roustabouts and roughnecks came first. The artists and oddballs, who have a different kind of toughness, followed. They got wind of what our life was like and they bought, bummed or conned their way up here. Some got space research jobs and shifted over to us at the ends of their stints. Others came up on awards trips and managed to get lost from their parties and accidentally find us. They brought their tapes and instruments with them, their sketchbooks and typers; some even smuggled up their own balloons. Most of them learned to do some sort of space work—it's good insurance on staying aloft. But don't get me wrong. We're none of us work-crazy. Actually we're

the laziest cats in the cosmos: the ones who couldn't bear the thought of carrying their own weight around every day of their lives! We mostly only toil when we have to have money for extras or when there's a job that's just got to be done. We're the dreamers and funsters, the singers and studiers. We leave the 'to the stars by hard ways' business to our friends the space marines. When we use the 'ad astra per aspera' motto (was it your high school's too?) we change the last word to asparagus—maybe partly to honor the green guk we grow to get us oxygen (so we won't be chiseling too much gas from the Government) and to commemorate the food-yeasts and the other stuff we grow from our garbage.

"What sort of life do we have up here? How can we stand it cooped up in a lot of stinking balloons? Man, we're *free* out here, really free for the first time. We're floating, literally. Gravity can't bow our backs or break our arches or tame our ideas. You know, it's only out here that stupid people like us can really think. The weightlessness floats our thoughts and we can sort them. Ideas grow out here like nowhere else—it's the right environment for them.

"Anybody can get into space if he wants to hard enough. The ticket is a dream.

"That's our story, folks. We took the space road because it was the only frontier left. We had to come out, just because space was here, like the man who climbed the mountain, like the first man who skin-dove into the green deeps. Like the first man who envied a bird or a shooting star."

The music had softly soared with Fat's words. Now it died with them and when he spoke again it was without accompaniment, just a flat lonely voice.

"But that isn't quite the end of the story, folks. I told you I had something serious to impart—serious to us anyway. It looks like we're not going to be able to stay in space, folks. We've been told to get out. Because we're the wrong sort of people. Because we don't have the legal right to stay here, only the right that's conveyed by a dream.

"Maybe there's real justice in it. Maybe we've sat too long in the starbird seat. Maybe the beat generation doesn't belong in space. Maybe space belongs to soldiers and the civil service, with a slice of it for the research boys. Maybe there's somebody who wants to be in space more than we do. Maybe we deserve our comedownance. I wouldn't know.

"So get ready for a jolt, folks. We're coming back! If you *don't* want to see us, or if you think we ought to be kept safely cooped up here for security reasons—*your* security —you just might let the President know.

"This is the Beat Cluster, folks, signing off."

As Fats and the band pushed away from each other, Fats saw that the little local audience in the sending balloon had grown and that not all new arrivals were fellow floaters.

"Fats, what's this nonsense about you people privatizing your activities and excluding research personnel?" a grizzle-haired stringbean demanded. "You can't cut off recreation that way. I depend on the Cluster to keep my electron bugs happily abnormal. We even mention it downside in recruiting personnel—though we don't put it in print."

"I'm sorry, Mr. Thoms," Fats said. "No offense meant to you or to General Electric. But I got no time to explain. Ask somebody else."

"Whatdya mean, no offense?" the other demanded, grabbing at the purple shorts. "What are you trying to do, segregate the squares in space? What's wrong with research? Aren't we good enough for you?"

"Yes," put in Rumpleman of Convair, "and while you're doing that would you kindly throw some light on this directive we just received from the new A—that the Cluster's off-bounds to us and that all dating between research personnel and Cluster girls must stop? Did *you* put the new A up to that, Fats?"

"Not exactly," Fats said. "Look, boys, let up on me. I got work to do."

"Work!" Rumpleman snorted.

"Don't think you're going to get away with it," Thoms warned Fats. "We're going to protest. Why, the Old Man is frantic about the 3D chess tournament. He says the Brain's the only real competition he has up here." (The Old Man was Hubert Willis, guiding genius of the open bevatron on the other side of the satellite.)

"The other research outfits are kicking up a fuss too," Trace Davis put in. "We spread the news like you said, and they say we can't walk out on them this way."

"Allied Microbiotics," Gussy Friml said, "wants to know who's going to take over the experiments on unshielded guk societies in freefall that we've been running for them in the Cluster."

Two of the newcomers had slightly more confidential messages for Fats.

Allison of Convair said, "I wouldn't tell you, except I think you've guessed, that I've been using the Beat Cluster as a pilot study in the psychology of anarchic human societies in freefall. If you cut yourself off from us, I'm in a hole."

"It's mighty friendly of you to feel that way," Fats said, "but right now I got to rush."

Space Marines Sergeant Gombert, satellite police chief, drew Fats aside and said, "I don't know why you're giving research a false impression of what's happening, but they'll find out the truth soon enough and I suppose you have your own sweet insidious reasons. Meanwhile I'm here to tell you that I can't spare the men to police your exodus. As you know, you old corner-cutter, this place is run more like a national park than a military post, in spite of its theoretical high security status. I'm going to have to ask you to handle the show yourself, using your best judgment."

"We'll certainly work hard at it, Chief," Fats said. "Hey, everybody, get cracking!"

"Understand," Gombert continued, his expression very fierce, "I'm wholly on the side of officialdom. I'll be of-

ficially overjoyed to see the last of you floaters. It just so happens that at the moment I'm short-handed."

"I understand," Fats said softly, then bellowed, "On the jump, everybody!"

But at sunset the new A's proctor was again facing him, rightside-up this time, in the Big Igloo.

"Your first fifty were due at the boarding tube an hour ago," the proctor began ominously.

"That's right," Fats assured him. "It just turns out we're going to need a little more time."

"What's holding you up?"

"We're getting ready, Mr. Proctor," Fats said. "See how busy everybody is?"

A half dozen figures were rhythmically diving around the Big Igloo, folding the sun-quilt. The sun's disk had dipped behind the Earth and only its wild corona showed, pale hair streaming across the star-fields. The Earth had gone into its dark phase, except for the faint unbalanced halo of sunlight bent by the atmosphere and for the faint dot-dot-dot of glows that were the Los Angeles-Chicago-New York line. Soft yellow lights sprang up here and there in the Cluster as it prepared for its short night. The transparent balloons seemed to vanish, leaving a band of people camped among the stars.

The proctor said, "We know you've been getting some unofficial sympathy from research and even the MPs. Don't depend on it. The new Administrator can create special deputies to enforce the deportation orders."

"He certainly can," Fats agreed earnestly, "but he don't need to. We're going ahead with it all, Mr. Proctor, as fast as we're able. F'rinstance, our groundclothes ain't sewed yet. You wouldn't want us arriving downside nine-tenths naked an' givin' the sat' a bad reputation. So just let us work an' don't joggle our elbow."

The proctor snorted. He said, "Let's not waste each other's time. You know, if you force us to do it, we can cut off your oxygen."

There was a moment's silence. Then from the side Trace Davis said loudly, "Listen to that! Listen to a man who'd

solve the groundside housing problem by cutting off the water to the slums."

But Fats frowned at Trace and said quietly only, "If Mr. Proctor shut down on our air, he'd only be doing the satellite a disservice. Right now our algae are producing a shade more oxy than we burn. We've upped the guk production. If you don't believe me, Mr. Proctor, you can ask the atmosphere boys to check."

"Even if you do have enough oxygen," the proctor retorted, "you need our forced ventilation to keep your air moving. Lacking gravity convection, you'd suffocate in your own exhaled breath."

"We got our fans ready, battery driven," Fats told him.

"You've got no place to mount them, no rigid framework," the proctor objected.

"They'll mount on harnesses near each tunnel mouth," Fats said imperturbably. "Without gravity they'll climb away from the tunnel mouths and ride the taut harness. Besides, we're not above hand labor if it's necessary. We could use punkahs."

"Air's not the only problem," the proctor interjected. "We can cut off your food. You've been living on handouts."

"Right now," Fats said softly, "we're living half on yeasts grown from our own personal garbage. Living well, as you can see by a look at me. And if necessary we can do as much better than half as we have to. We're farmers, man."

"We can seal off the Cluster," the proctor snapped back, "and set you adrift. The orders allow it."

Fats replied, "Why not? It would make a very interesting day-to-day drama for the groundside public and for the food chemists—seeing just how long we can maintain a flourishing ecology."

The proctor grabbed at his nylon line. "I'm going to report your attitude to the new Administrator as hostile," he sputtered. "You'll hear from us again shortly."

"Give him our greetings when you do," Fats said. "We haven't had an opportunity to offer them. And there's one other thing," he called after the proctor, "I notice you

hold your nose mighty rigid in here. It's a waste of energy. If you'd just steel yourself and take three deep breaths you'd never notice our stink again."

The proctor bumped into the tunnel side in his haste to be gone. Nobody laughed, which doubled the embarrassment. If they'd have laughed he could have cursed. Now he had to bottle up his indignation until he could discharge it in his report to the Administrator.

But even this outlet was denied him.

"Don't tell me a word," the new Administrator snapped at his proctor as the latter zipped into the aluminum office. "The deportation is canceled. I'll tell you about it, but if you tell anybody else I'll down-jump *you*. In the last twenty minutes I've had messages direct from the Space Marshal and the President. We must not disturb the Beat Cluster because of public opinion and because, although they don't know it, they're a pilot experiment in the free migration of people into space." ("Where else, Joel," the President had said, "do you think we're going to get people to go willingly off the Earth and achieve a balanced existence, using their own waste products? Besides, they're a floating labor pool for the satellites. And Joel, do you realize Jordan's broadcast is getting as much attention as the Russian landings on Ganymede?") The new Administrator groaned softly and asked the Unseen, "Why don't they tell a new man these things before he makes a fool of himself?"

Back in the Beat Cluster, Fats struck the last chord of "Glow Little Glow Worm." Slowly the full moon rose over the satellite, dimming the soft yellow lights that seemed to float in free space. The immemorial white globe of Luna was a little bit bigger than when viewed from Earth and its surface markings were more sharply etched. The craters of Tycho and Copernicus stood out by reason of the bright ray systems shooting out from them and the little dark smudge of the Mare Crisium looked like a curled black kitten. Fats led those around him into a new song:

"Gonna be a *pang*
"Leavin' space,
"Gonna be a *pang!*
"Gonna be a *pang*
"Leavin' space,
"So we won't go!"

THE FOXHOLES OF MARS

EVER inward from the jagged horizon, the machines of death crept, edged, scurried, rocketed and tunneled towards him. It seemed as if all this purple-sunned creation had conspired to isolate and smash him. To the west—for all planets share a west, if nothing else—the nuclear bombs bloomed, meaningless giant fungi. While invisibly overhead the space ships roared as they dipped into the atmosphere—distant as gods, yet shaking the yellow sky. Even the soil was treacherous, nauseated by artificial earthquakes—nobody's mother, least of all an Earthman's.

"Why don't you cheer up?" the others said to him. "It's a mad planet." But he would not cheer up, for he knew what they said was literally true.

He ducked and compressed himself as objects many times shattered, spurted up and cascaded. Soon they would fall back and the enemy would retake the mangled thing they called an objective. Was it the sixth time? The seventh? And did the soldiers on the other side have six legs, or eight? The enemy was pretty haphazard as to what troops he used in this sector.

Worst was the noise. Meaningless, mechanical screeches tore at his skull, until thoughts rattled around in it like dry seeds in a dry pod. How could anyone ever love the various shock-transmitting mixtures of gases humorously called air? Even the vacuum of space was less hateful—it was silent and clean. He started to lift his hands to his ears, then checked the gesture, convulsed in soundless laughter and tearless weeping. There had been a galactic society—a galactic empire—once. He had played an unnoticed part on one of its nice quiet planets. But now?

Galactic empire? Galactic horse-dung! Perhaps he had always hated his fellow men as much. But in the prewar days his hatred had been closely bound and meticulously repressed. It was still bound, tighter than ever, but it was no longer repressed from his thoughts.

The deadly engine he tended, silent for a moment, began again to chatter to those of the enemy, although its voice was mostly drowned by their booming ones, like a spiteful child in a crush of complacent adults.

It turned out they had been covering a withdrawal of Martian sappers and must now escape as best they might. The officer running beside him fell. He hesitated. The officer cursed a new, useless joint that had appeared in his leg. All the others—including the black-shelled Martians—were ahead. He glanced around fearfully and tormentedly, as if he were about to commit a hideous crime. Then he lifted the officer and staggered on, reeling like a top at the end of its spin. He was still grinning in a spasmic way when they reached the security of lesser danger; and even when the officer thanked him with curt sincerity he couldn't stop. Nevertheless, they gave him the Order of Planetary Merit for that.

He stared at the watery soup and meat shreds in his mess tin. The cellar was cool, and its seats—though built for creatures with four legs and two arms—were comfortable. The purple daylight was pleasantly muted. The noise had gone a little way off, playing cat and mouse. He was alone.

Of course life had never had any meaning, except for the chillingly sardonic one perceptible to the demons in the nuclear bombs and the silver giants in space who pushed the buttons; and he had no stomach to aspire to that. They'd had ten thousand years to fix things, those giants, and still all they could tell you was go dig yourself a hole.

It was just that in the old days the possibility of relaxation and petty self-indulgence, against the magnificent sham background of galactic empire, had permitted him

to pretend life had a meaning. Yet at a time like this, when such an illusion was needful, it ran out on you, jeered at you along with the lesser lies it had nurtured.

A three-legged creature skipped out of the shadows, halted at a distance, and subtly intimated it would like food. At first he thought it must be some Rigelian tripedal, but then he saw it was an Earth cat lacking a leg. Its movements were grotesque, but efficient, and not without a certain gracefulness. How it could have got to this planet, he found it hard to imagine.

"But you don't worry about that—or even about other cats, Three-legs," he thought bitterly. "You hunt alone. You mate with your own kind, when you can, but then only because it is most agreeable. You don't set up your own species as a corporate divinity and worship it, and yearn over the light-centuries of its empire, and eat out your heart because of it, and humbly spill your blood at its cosmic altar.

"Nor are you hoodwinked when the dogs bark about the greatness of humanity under a thousand different moons, or when the dumb cattle sigh from surfeit and gratefully chew their cuds under red, green and purple suns. You accept us as something sometimes helpful. You walk into our space ships as you walked up to our fires. You use us. But when we're gone, you won't pine on our graves or starve in the pen. You'll manage, or try to."

The cat mewed and he tossed it a bit of meat which it caught in its teeth, shifting about cleverly on the two good hind legs. But as he watched it daintily nibble (though scrawny with famine), he suddenly saw Kenneth's face, just as he had last seen it on Alpha Centauri Duo. It seemed very real, projected against the maroon darkness towards the other end of the cellar. The full, tolerant lips lined at the corners, the veiledly appraising eyes, the space-sallow skin were all exactly as they had been when they roomed together at the Sign of the Burnt-Out Jet. But there was a richness and a zest about the face that he had missed before. He did not try to move toward the illusion, though he wanted to. Only looked. Then there came the sound of boots on the floor above, and the cat bounded

away, humping its hind quarters quite like a tripedal, and the vision quickly faded. For a long time he sat staring at the spot where it had been, feeling a strangely poignant unhappiness, as if the only worthwhile being in the world had died. Then he started to eat his food with the vague curiosity of a two-year-old, sometimes pausing with the spoon halfway to his mouth.

It was night and there was a ground mist through which the wine-colored moons showed like two sick eyes, and anything might have been moving in the shadows. He squinted and peered, but it was hard to make out the nature of any object, the landscape was so torn and distorted. Three men came out of the place of underground concealment to the left, joking together in hushed, hollow voices. One whom he knew well (a stocky soldier with big eyes and smirking lips and reddish stubble on his chin) greeted him with a friendly gibe about easy jobs. Then they wormed their way up and started to crawl toward where enemy scouts (six legs or eight?) were supposed to lie. He lost sight of them very quickly. He held his weapon ready, watching for the sight of the enemy.

Why did he hate the soldiers of the enemy so little? No more than a Martian hunting sand-dragons hates sand-dragons. His relationship with them was limited, almost abstract. How could he hate something so different from himself in form? He could only marvel that it too had intelligence. No, the enemy were merely, unfortunately, dangerous targets. Once he had seen one of them escape death, and it had made him feel happy, and he wanted to wave in a friendly way; even if it could only wriggle a tentacle in return. But as for the men who fought side by side with him, he hated them bitterly, loathed their faces, voices and physical mannerisms. The way this one chewed and that one spat. Their unchanging curses, clichés and jokes. All unendurably magnified, as if his nose were being rubbed in offal. For they were part of the same miserable, lying, self-worshipping galactic swarm as himself.

He wondered if he had hated the men at the office on Altair Una in the same way. Almost certainly. He recalled

the long smoldering irritations over trifles that had seemed tremendous in the hours between the violin-moans of the time clock. But then there had been the safety valves and shock absorbers that make life tolerable, and also the illusion of purpose.

But now there was nothing, and everybody knew it.

They had no right to joke about it and continue the pretense.

He was shaking with anger. To kill indiscriminately would at least demonstrate his feelings. To focus death on the backs of men charging with inane hysteria. To toss a nuclear fizz-bomb into a dugout where men sought secret escape in dreams and repeated like prayers their rationalizations about galactic empires. Dying at his hand, they might for a moment understand their own vicious hypocrisy.

From out ahead, one of death's little mechanisms spoke concisely, rapidly. It seemed like a bugle call only he could hear.

Ruby moonlight slid suddenly across the grotesquely tortured ground. He raised his weapon and took aim. Its sound pleased him because it was like a soft groan of agony. Then he realized he had fired at the abruptly revealed shadow because it was that of the stocky soldier who had gibed and crawled away.

The moonlight blacked out as if a curtain had been drawn. His heart pounded. He ground his teeth and grinned. His feelings were fierce, but not yet determinate. He became aware of the smells of the ground and of the chemicals and metals: strong, sharp, interesting smells.

Then he found himself staring at a whitish patch that never got more than eight inches off the ground. Slowly it approached out of the darkness, like the inquisitive head of a huge ghost worm. It became a face with big eyes and smirking lips, fretted with red stubble. Mechanically he reached out a hand and helped the man down.

"Were you the one that winged him? That lousy spider would have gotten me for sure. I didn't see him until he fell on me. I'm all mucked up with his blue slime."

This then was the end. Hereafter he would give in to the

mob, run with the hounds, die purposelessly like a lemming when the time came. He might even learn to nurse ideals, like dead dolls; dream in chaos. Never again would he aspire to the darker, icy insight that gave life a real, though horrible, meaning. He was a ridiculous little communal animal in a lemming horde racing across the galaxy and he would live like one.

He saw the small black object falling swiftly through the mist. The stocky soldier did not. There was a deafening blast that slapped the skin. Looking up he saw the stocky soldier still standing there. Without a head. As the body stumbled blindly forward, tripped and fell, he began to laugh in little hissing gusts through his teeth. His lips were drawn back, so that his jaw muscles twitched and pained him.

He felt contemptuous amusement at the blond soldier. The blond soldier had been to a third-rate nuclear technics school and believed it had been a serious mistake to put him in the infantry. Nevertheless the blond soldier was ambitious and took an unusual interest in the war.

They stood alone at the crest of a ridge thick with violet and yellow-spotted vines. In the valleys on either side, their units were pushing forward. Trails of dust and tracks of mashed vines extended as far as the eye could see. Various huge engines trompled forward, carrying men, and men ran fussily about, freeing engines that had met with some stop or hindrance, as if the two were inextricably united in an unimaginable symbiosis. Small machines bearing messengers went swiftly to and fro like centaurs, a superior type of individual. Other machines spied watchfully overhead. It was like some vast, clumsy monster feeling its way, cautiously putting out pseudopods, or horns like a snail's; withdrawing them puzzledly when they touched anything hurtful or strange; but always gathering itself for a new effort. It did not flow, but humped and hedged. Or scuttled. Like an army of Rigelian roaches. Or driver ants of Earth that were so like miniature Martians, with their black-weaponed soldiers, foragers, scouts, butchers, pack carriers.

And they were truly neither more nor less than ants. He was no more than an epidermal cell in a monster that was dueling with another monster, very careful of its inner organs but careless about its epidermis. There was something comfortingly abstract and impersonal about the idea of being united in such a way with many other men, not because of any shared purpose, but merely because they belonged to the same monster, a monster so large that it could readily do duty for fate and necessity. The fellowship of protoplasm.

The blond soldier murmured two or three words and for a moment he thought the whole army had spoken to him. Then he understood and made the necessary adjustment in the instrument they were setting up.

But those two or three words had plunged him with breath-taking abruptness into the worst sort of inner misery. What was abstract had become personal, and that was bad. To conceive a monster made of men was one thing; to feel the insensate, inescapable prod of a neighboring cell and realize the stifling, close-packed pressure of the whole was another. He lifted his hand to his collar. The very air seemed to convey to his skin the shoving and jostling of distant, invisible individuals. The nudge of the galactic horde.

They were at the end of the crest now, atop a little hillock, and he stared ahead to where the air was clearer. He felt as if he were suffocating. His new mood had come as utterly without warning as most of his moods now came, gushing up explosively from some wild, alien, ever expanding dimension within him.

Then, in the broad expanse of fantastically clouded sky ahead of him, he saw his friends' faces again, orderly and side by side but gigantic, like a pantheon of demigods. Just as he had in the cellar and several times since, only now altogether. The only faces that meant anything in the cosmos. Black George, with the wide grin that looked, but was not, stupid. Hollow-cheeked Loren, peering up with shy canniness, about to argue. Dark Helen, with her proud, subtle lips. Sallow Kenneth again, with his veiledly appraising eyes. And Albert, and Maurice, and Kate. And

others whose features were blurred, heartbreakingly suggesting friends forgot. All transfigured and glowing with warmth and light. As meaningful as symbols, yet holding each within itself the quintescence of individuality.

He stood stock-still, beginning to tremble, feeling great guilt. How had he neglected and deserted them? His friends, the only ones deserving his loyalty, the only island for him in the cosmos-choking sea of humanity, the only ones with worth and meaning; compared to which race and creed and humanity were without significance. It was as self-evident and undeniable as a premise in mathematics. Heretofore he had seen only the masks of reality, the reflections, the countershadows. Now, at a bound, he stood beside the gods in darkness who pulled the wires.

The vision faded, became part of his mind. He turned, and it was as if he saw the blond soldier for the first time. How had he ever believed that he and the other soldier might have anything in common? The gulf between them was far, far greater than if they belonged to different species. Why had he ever given two thoughts to such a silly, squinty-eyed, bustling little organism? He never would again. It was all very clear.

"We'll get them this time," the other soldier said with conviction. "We've got the stuff now. We'll show the bugs. Come on."

It was wonderful, hysterical, insufferable. Yesterday spiders. Today bugs. Tomorrow worms? The other soldier really believed it was important and noble. Could still pretend there was that kind of meaning and purpose to that sort of slaughter.

"Come on. Get the beta cycling," said the other soldier impatiently, nudging him.

It was all very clear. And he would never lose that clarity. By one action he would cut himself off from the galactic pack and cleave forever to the faces in the sky.

"Come on," ordered the other soldier, jerking at him.

He unsheathed his weapon, touched a button. Silently a dull black spot, not a hole, appeared in the back of the blond soldier's head. He hid the body, walked down the

other side of the hill, and attached himself to another unit. By morning they were retreating again, the monster badly hurt and automatically resisting dissolution.

He was an officer now.

"I don't like him," said a soldier. "Of course, they all try to scare you, whether they know it or not. Part of the business. But with him it's different. I know he doesn't talk tough, or threaten or act grim. I know he's pleasant enough when he takes time to notice you. Even sympathetic. But there's something there I can't put my finger on. Something cold-blooded. Like he wasn't even alive—or as if we weren't. Even when he acts especially decent or thoughtful toward me, I know he doesn't give a damn. It's his eyes. I can read meaning in the eyes of a Fomalhautian blindworm. But I can't read anything in his."

The soaring city seemed alien though it had once been home. He liked it the better for that. Civilian clothes felt strange against his skin.

He whisked briskly along the sidewalk, taking the turns aimlessly when it split at the pedestrian cloverleafs. He looked at the passing faces with frank inquisitiveness, as if he were at a zoo. He just wanted to enjoy the feeling of anonymity for a little while. He knew what he was going to do afterwards. There were his friends, and there were the animals. And the fortunes of his friends were to be advanced.

Beside the next cloverleaf was a speaker, and a little crowd. There had been a good deal of that sort of stuff since the truce. Curiously he listened, recognized the weakness of the words. They were sloshed with ideals, tainted with unprofitable, poorly selected hatreds. The call to action was tinged by an undercurrent of bitterness that argued inaction would be better. They were civilized words and therefore useless to one who wanted to become an animal trainer on a galactic scale. What a zoo he'd have some day—and every single beast in it advertised as intelligent!

Other words and phrases began to ooze up into his

mind. "Thinkers! Listen to me . . . cheated of what you deserve . . . misled by misled men . . . the galactic run-around . . . this engineered truce . . . the creatures who used the war to consolidate their power . . . The Cosmic Declaration of Servitude . . . life—to lose . . . liberty—to obey . . . and as for the pursuit of happiness—happiness is a light-millennium ahead of all of us . . . our universal rights. . . . We have thirty armored planetoids orbiting uselessly, three hundred starships, three thousand space-ships, and three million space veterans sweating in servile jobs in this system alone! Free Martia! Terra for All! Revenge. . . ."

These unspoken words, he felt, were the harbingers of leadership. Alexander had done it. Hitler had done it. Smith had done it. Hrivlath had done it. The Neuron had done it. The Great Centaur had done it. All murderers—and only murderers won. He saw the brilliant light-years of his future stretch ahead, endlessly. He saw no details, but it was all of the same imperial color. Never again would he hesitate. Each moment would decide something. Each of his future actions would drop like a grain of sand from an ancient hour glass, inevitably.

Profound excitement seized him. The scene around him grew and grew until he seemed at the center of a vast, ominous spellbound crowd that filled the galaxy. The faces of his friends were close, eager and confident. And from a great distance, as if the stars themselves pricked out its pattern on the dark like a new constellation, he seemed to see his own face staring back at him, pale, skull-eyed, and insatiably hungry.

PIPE DREAM

IT WASN'T until the mermaid turned up in his bathtub that Simon Grue seriously began to wonder what the Russians were doing on the roof next door.

The old house next door together with its spacious tar-papered roof, which held a sort of pent-shack, a cylindrical old water tank, and several chicken-wire enclosures, had always been a focus of curiosity in this region of Greenwich Village, especially to whoever happened to be renting Simon's studio, the north window-cum-skylight of which looked down upon it—if you were exceptionally tall or if, like Simon, you stood halfway up a stepladder and peered.

During the 1920's, old-timers told Simon, the house had been owned by a bootlegger, who had installed a costly pipe organ and used the water tank to store hooch. Later there had been a colony of shaven-headed Buddhist monks, who had strolled about the roof in their orange and yellow robes, meditating and eating raw vegetables. There had followed a *commedia dell' arte* theatrical group, a fencing salon, a school of the organ (the bootlegger's organ was always one of the prime renting points of the house), an Arabian restaurant, several art schools and silvercraft shops of course, and an Existentialist coffee house.

The last occupants had been two bony-cheeked Swedish blondes who sunbathed interminably and had built the chicken-wire enclosures to cage a large number of sinister smoke-colored dogs—Simon decided they were breeding werewolves, and one of his most successful abstractions, "Gray Hunger," had been painted to the inspiration of an eldritch howling. The dogs and their owners had departed abruptly one night in a closed van, without any

of the dogs ever having been offered for sale or either of the girls having responded with anything more than a raised eyebrow to Simon's brave greetings of "Skoall"

The Russians had taken possession about six months ago —four brothers apparently, and one sister, a beauty, who never stirred from the house but could occasionally be seen peering dreamily from a window. A white card with a boldly-inked "Stulnikov-Gurevich" had been thumb-tacked to the peeling green-painted front door. Lafcadio Smits, the interior decorator, told Simon that the new-comers were clearly White Russians; he could tell it by their several bushy beards. Lester Phlegius maintained that they were Red Russians passing as White, and talked alarmingly of spying, sabotage and suitcase bombs.

Simon, who had the advantages of living on the spot and having been introduced to one of the brothers—Vasily—at a neighboring art gallery, came to believe that they were both Red and White and something more—solid, complete Slavs in any case, Double Dostoevsky Russians if one may be permitted the expression. They ordered vodka, caviar, and soda crackers by the case. They argued interminably (loudly in Russian, softly in English), they went on mysterious silent errands, they gloomed about on the roof, they made melancholy music with their deep harmonious voices and several large guitars. Once Simon thought they even had the bootlegger's organ going, but there had been a bad storm at the time and he hadn't been sure.

They were not quite as tightlipped as the Swedish girls. Gradually a curt front-sidewalk acquaintance developed and Simon came to know their names. There was Vasily, of course, who wore thick glasses, the most scholarly-looking of the lot and certainly the most bibulous—Simon came to think of Vasily as the Vodka Breather. Occasionally he could be glimpsed holding Erlenmeyer flasks, trays of culture dishes, and other pieces of biological equipment, or absent-mindedly wiping off a glass slide with his beard. When Lester Phlegius heard that, he turned pale and whispered, "Germ warfare!"

Then there was Ivan, the dourest of the four, though none of them save Vasily seemed very amiable. Simon's

private names for Ivan were the Nihilist and the Bomber, since he sometimes lugged about with him a heavy globular leather case. With it and his beard—a square black one—he had more than once created a mild sensation in the narrow streets of the Village.

Next there was Mikhail, who wore a large crucifix on a silver chain around his neck and looked like a more spiritual Rasputin. However, Simon thought of him less as the Religious than as the Whistler—for his inveterate habit of whistling into his straggly beard a strange tune that obeyed no common harmonic laws. Somehow Mikhail seemed to carry a chilly breeze around with him, a perpetual cold draught, so that Simon had to check himself in order not to clutch together his coat collar whenever he heard the approach of the eerie piping.

Finally there was Lev, beardless, shorter by several inches, and certainly the most elusive of the brothers. He always moved at a scurry, frequently dipping his head, so that it was some time before Simon assured himself that he had the Stulnikov-Gurevich face. He did, unmistakably. Lev seemed to be away on trips a good deal. On his returns he was frequently accompanied by furtive but important-looking men—a different one on each occasion. There would be much bustle at such times—among other things, the shades would be drawn. Then in a few hours Lev would be off again, and his man-about-town companion too.

And of course there was the indoors-keeping sister. Several times Simon had heard one of the brothers calling "Grushenka," so he assumed that was her name. She had the Stulnikov-Gurevich face too, though on her, almost incredibly, it was strangely attractive. She never ventured out on the roof but she often sat in the pent-shack. As far as Simon could make out, she always wore some dark Victorian costume—at least it had a high neck, long sleeves, and puffed shoulders. Pale-faced in the greenish gloom, she would stare for hours out of the pent-shack's single window, though never in Simon's direction. Occasionally she would part and close her lips, but not exactly as if she were speaking, at least aloud—he thought of call-

ing her the Bubble Blower. The effect was as odd as Mikhail's whistling but not as unpleasant. In fact, Simon found himself studying Grushenka for ridiculously long periods of time. His mild obsession began to irk him and one day he decided henceforth to stay away altogether from his north window and the stepladder. As a result he saw little of the alterations the Russians began to make on the roof at this point, though he did notice that they lugged up among other things a length of large-diameter transparent plastic piping.

So much for the Russians, now for the mermaid. Late one night Simon started to fill his bathtub with cold water to soak his brushes and rags—he was working with a kind of calcimine at the time, experimenting with portable murals painted on large plaster-faced wooden panels. Heavily laden, he got back to the bathroom just in time to shut off the water—and to see a tiny fish of some sort splashing around in it.

He was not unduly surprised. Fish up to four or five inches in length were not unheard-of apparitions in the cold-water supply of the area, and this specimen looked as if it displaced no more than a teaspoon of water.

He made a lucky grab and the next moment he was holding in his firmly clenched right hand the bottom half of a slim wriggling creature hardly two inches long—and now Simon was surprised indeed.

To begin with, it was not greenish white nor any common fish color, but palely-pinkish, flesh-colored in fact. And it didn't seem so much a fish as a tadpole—at least its visible half had a slightly oversize head shaped like a bullet that has mushroomed a little, and two tiny writhing arms or appendages of some sort—and it felt as if it had rather large hips for a fish or even a tadpole. Equip a two-months human embryo with a finny tail, give it in addition a precocious feminine sexiness, and you'd get something of the same effect.

But all that was nothing. The trouble was that it had a face—a tiny face, of course, and rather goggly-ghostly like a planarian's, but a face nevertheless, a human-looking

face, and also (here was the real trouble) a face that bore a grotesque but striking resemblance to that of Grushenka Stulnikov-Gurevich.

Simon's fingers tightened convulsively. Simultaneously the slippery creature gave a desperate wriggle. It shot into the air in a high curve and fell into the scant inch of space between the bathtub and the wall.

The next half hour was hectic in a groveling sort of way. Retrieving anything from behind Simon's ancient claw-footed bathtub was a most difficult feat. There was barely space to get an arm under it and at one point the warping of the floor boards prevented even that. Besides, there was the host of dust-shrouded objects it had previously been too much trouble to tease out—an accumulation of decades. At first Simon tried to guide himself by the faint flopping noises along the hidden base of the wall, but these soon ceased.

Being on your knees and your chest with an ear against the floor and an arm strainingly outstretched is probably not the best position to assume while weird trains of thought go hooting through your head, but sometimes it has to happen that way. First came a remembered piece of neighborhood lore that supported the possibility of a connection between the house next door and the tiny pink aquatic creature now suffering minute agonies behind the bathtub. No one knew what ancient and probably larceny-minded amateur plumber was responsible, but the old-timers assured Simon there was a link between the water supply of the Russians' house with its aerial cistern and that of the building containing Simon's studio and several smaller apartments; at any rate they maintained that there had been a time during the period when the bootlegger was storing hooch in the water tank that several neighborhood cold-water taps were dispensing a weak but nonetheless authoritative mixture of bourbon and branch water.

So, thought Simon as he groped and strained, if the Russians were somehow responsible for this weird fishlet, there was no insuperable difficulty in understanding how it might have got here.

But that was the least of Simon's preoccupations. He scrabbled wildly and unsuccessfully for several minutes, then realizing he would never get anywhere in this unsystematic manner, he began to remove the accumulated debris piece by piece: dark cracked ends of soap, washrags, dried out in tortured attitudes, innumerable dark-dyed cigarette stumps, several pocket magazines with bleached wrinkled pages, empty and near-empty medicine bottles and pill vials, rusty hairpins, bobby pins, safety pins, crumpled toothpaste tubes (and a couple for oil paint), a gray toothbrush, a fifty-cent piece and several pennies, the mummy of a mouse, a letter from Picasso, and last of all, from the dark corner behind the bathtub's inside claw, the limp pitiful thing he was seeking.

It was even tinier than he'd thought. He carefully washed the dust and flug off it, but it was clearly dead and its resemblance to Grushenka Stulnikov-Gurevich had become problematical—indeed, Simon decided that someone seeing it now for the first time would think it a freak minnow or monstrous tadpole and nothing more, though mutation or disease had obviously been at work. The illusion of a miniature mermaid still existed in the tapering tail and armlike appendages, but it was faint. He tried to remember what he knew about salamanders—almost nothing, it turned out. He thought of embryos, but his mind veered away from the subject.

He wandered back into the studio carrying the thing in his hand. He climbed the stepladder by the north window and studied the house next door. What windows he could see were dark. He got a very vague impression that the roof had changed. After he had strained his eyes for some time he fancied he could see a faint path of greenish luminescence streaming between the pent-shack and the water-tank, but it was very faint indeed and might only be his vision swimming.

He climbed down the stepladder and stood for a moment weighing the tiny dead thing in his hand. It occurred to him that one of his friends at the university could dig up a zoologist to pass on his find.

But Simon's curiosity was more artistic than scientific.

In the end he twisted a bit of cellophane around the thing, placed it on the ledge of his easel and went off to bed . . . and to a series of disturbingly erotic dreams.

Next day he got up late and, after breakfast on black coffee, gloomed around the studio for a while, picking things up and putting them down. He glanced frequently at the stepladder, but resisted the temptation to climb up and have another look next door. Sighing, he thumbtacked a sheet of paper to a drawing broad and halfheartedly began blocking in a female figure. It was insipid and lifeless. Stabbing irritably at the heavy curve of the figure's hip, he broke his charcoal. "Damn!" he said, glaring around the room. Abandoning all pretense, he threw the charcoal on the floor and climbed the stepladder. He pressed his nose against the glass.

In daylight, the adjoining roof looked bare and grimy. There was a big transparent pipe running between the water tank and the shack, braced in two places by improvised-looking wooden scaffolding. Listening intently, Simon thought he could hear a motor going in the shack. The water looked sallow green. It reminded Simon of those futuristic algae farms where the stuff is supposed to be pumped through transparent pipes to expose it to sunlight. There seemed to be a transparent top on the water tank too—it was too high for Simon to see, but there was a gleam around the edge. Staring at the pipe again, Simon got the impression there were little things traveling in the water, but he couldn't make them out.

Climbing down in some excitement, Simon got the twist of cellophane from the ledge of the easel and stared at its contents. Wild thoughts were tumbling through his head as he got back up on the stepladder. Sunlight flashed on the greenish water pipe between the tank and the shack, but after the first glance he had no eyes for it. Grushenka Stulnikov-Gurevich had her face tragically pressed to the window of the shack. She was wearing the black dress with high neck and puffed shoulders. At that moment she looked straight at him. She lifted her hands and seemed to speak imploringly. Then she slowly sank

from sight as if, it horridly occurred to Simon, into quicksand.

Simon sprang from his chair, heart beating wildly, and ran down the stairs to the street. Two or three passers-by paused to study him as he alternately pounded the flaking green door of the Russians' house and leaned on the button. Also watching was the shirt-sleeved driver of a moving van, emblazoned "Stulnikov-Gurevich Enterprises," which almost filled the street in front of the house.

The door opened narrowly. A man with a square black beard frowned out of it. He topped Simon by almost a head.

"Yes?" Ivan the Bomber asked, in a deep, exasperated voice.

"I must see the lady of the house immediately," Simon cried. "Your sister, I believe. She's in danger." He surged forward.

The butt of the Bomber's right palm took him firmly in the chest and he staggered back. The Bomber said coldly, "My sister is—ha!—taking a bath."

Simon cried, "In that case she's drowning!" and surged forward again, but the Bomber's hand stopped him short. "I'll call the police!" Simon shouted, flailing his limbs. The hand at his chest suddenly stopped pushing and began to pull. Gripped by the front of his shirt, Simon felt himself being drawn rapidly inside. "Let go! Help, a kidnapping!" he shouted to the inquisitive faces outside, before the door banged shut.

"No police!" rumbled the Bomber, assisting Simon upstairs.

"Now look here," Simon protested futilely. In the two-story-high living room to his right, the pipes of an organ gleamed golden from the shadows. At the second landing, a disheveled figure met them, glasses twinkling—Vasily the Vodka Breather. He spoke querulously in Russian to Ivan, who replied shortly, then Vasily turned and the three of them crowded up the narrow third flight to the penthouse. This housed a small noisy machine, perhaps an aerator of some sort, for bubbles were streaming into the transparent pipe where it was connected to the machine;

and under the pipe, sitting with an idiot smile on a chair of red plush and gilt, was a pale black-mustached man. An empty clear-glass bottle with a red and gold label lay on the floor at his feet. The opposite side of the room was hidden by a heavy plastic shower curtain. Grushenka Stulnikov-Gurevich was not in view.

Ivan said something explosive, picking up the bottle and staring at it. "Vodka!" he went on. "I have told you not to mix the pipe and the vodka! Now see what you have done!"

"To me it seemed hospitable," said Vasily with an apologetic gesture. "Besides, only one bottle—"

Ducking under the pipe where it crossed the pentshack, Ivan picked up the pale man and dumped him crosswise in the chair, with his patent-leather shoes sticking up on one side and his plump hands crossed over his chest. "Let him sleep. First we must take down all the apparatus, before the capitalistic police arrive. Now: what to do with this one?" He looked at Simon, and clenched one large and hairy fist.

"*Nyet-nyet-nyet,*" said the Vodka Breather, and went to whisper in Ivan's ear. They both stared at Simon, who felt uncomfortable and began to back toward the door; but Ivan ducked agilely under the pipe and grasped him by the arm, pulling him effortlessly toward the roof exit. "Just come this way if you please, Mr. Gru-*ay,*" said Vasily, hurrying after. As they left the shack, he picked up a kitchen chair.

Crossing the roof, Simon made a sudden effort and wrenched himself free. They caught him again at the edge of the roof, where he had run with nothing clearly in mind, but with his mouth open to yell. Suspended in the grip of the two Russians, with Ivan's meaty palm over his mouth, Simon had a momentary glimpse of the street below. A third bearded figure, Mikhail the Religious, was staring up at them from the sunny sidewalk. The melancholy face, the deep-socketed tormented eyes, and the narrow beard tangled with the dangling crucifix combined to give the effect of a Tolstoy novel's dust-jacket. As they hauled Simon away, he had the impression that a chilly

breeze had sprung up and the street had darkened. In his ears was Mikhail's distant, oddly discordant whistling.

Grunting, the two brothers set Simon down on the kitchen chair and slid him across the roof until something hard but resilient touched the top of his head. It was the plastic pipe, through which, peering upward, he could see myriads of tiny polliwog-shapes flitting back and forth.

"Do us a kindness not to make noise," said Ivan, removing his palm. "My brother Vasily will now explain." He went away.

Curiosity as much as shock kept Simon in his chair. Vasily, bobbing his head and smiling, sat down tailor-fashion on the roof in front of him. "First I must tell you, Mr. Gru-*ay*, that I am specialist in biological sciences. Here you see results of my most successful experiment." He withdrew a round clear-glass bottle from his pocket and unscrewed the top.

"Ah?" said Simon tentatively.

"Indeed yes. In my researches, Mr. Gru-*ay*, I discovered a chemical which will inhibit growth at any level of embryonic development, producing a viable organism at that point. The basic effect of this chemical is always toward survival at whatever level of development—one cell, a blastula, a worm, a fish, a four-legger. The research, which Lysenko scoffed at when I told him of it, I had no trouble in keeping secret, though at the time I was working as the unhappy collaborator of the godless soviets. But perhaps I am being too technical?"

"Not at all," Simon assured him.

"Good," Vasily said with simple satisfaction and gulped at his bottle. "Meanwhile my brother Mikhail was a religious brother at a monastery near Mount Athos, my Nihilist brother Ivan was in central Europe, while my third brother Lev, who is of commercial talents, had preceded us to the New World, where he always felt it would some day be our destiny to join one another.

"With the aid of brother Ivan, I and my sister Grushenka escaped from Russia. We picked up Mikhail from his

monastery and proceeded here, where Lev had become a capitalist business magnate.

"My brothers, Ivan especially, were interested in my research. He had a theory that we could eventually produce hosts of men in this way, whole armies and political parties, all Nihilist and all of them Stulnikov-Gureviches. I assured him that this was impossible, that I could not play Cadmus, for free-swimming forms are one thing, we have the way to feed them in the aqueous medium; but to make fully developed mammals placental nourishment is necessary—that I cannot provide. Yet to please him I begin with (pardon me!) the egg of my sister, that was as good a beginning as any and perhaps it intrigued my vanity. Ivan dreamed his dreams of a Nihilist Stulnikov-Gurevich humanity—it was harmless, as I told myself."

Simon stared at him glassy-eyed. Something rather peculiar was beginning to happen inside his head—about an inch under the point where the cool water-filled plastic pipe pressed down on his scalp. Little ghostly images were darting—delightfully wispy little girl-things, smiling down at him impudently, then flirting away with a quick motion of their mermaid tails.

The sky had been growing steadily darker and now there came the growl of thunder. Against the purple-gray clouds Simon could barely make out the semi-transparent shapes of the golliwogs in the pipe over his head; but the images inside his mind were growing clearer by the minute.

"Ah, we have a storm," Vasily observed as the thunder growled again. "That reminds me of Mikhail, who is much influenced by our Finnish grandmother. He had the belief as a child that he could call up the winds by whistling for them—he even learned special wind musics from her. Later he became a Christian religious—there are great struggles in him. Mikhail objected to my researches when he heard I used the egg of my sister. He said we will produce millions of souls who are not baptized. I asked him how about the water they are in, he replied this is not the same thing, these little swimmers will wriggle

in hell eternally. This worried him greatly. We tried to tell him I had not used the egg of my sister, only the egg of a fish.

"But he did not believe this, because my sister changed greatly at the time. She no longer spoke. She put on my mother's bathing costume (we are a family people) and retired to the bathtub all day long. I accepted this—at least in the water she is not violent. Mikhail said, 'See, her soul is now split into many unredeemed sub-souls, one each for the little swimmers. There is a sympathy between them—a hypnotic vibration. So long as you keep them near her, in that tank on the roof, this will be. If they were gone from there, far from there, the sub-souls would reunite and Grushenka's soul would be one again.' He begged me to stop my research, to dump it in the sea, to scatter it away, but Lev and Ivan demand I keep on. Yet Mikhail warned me that works of evil end in the whirlwind. I am torn and undecided." He gulped at his vodka.

Thunder growled louder. Simon was thinking, dreamily, that if the soul of Grushenka Stulnikov-Gurevich were split into thousands of sub-souls, vibrating hynotically in the nearby water tank, with at least one of them escaping as far as his bathtub, then it was no wonder if Grushenka had a strange attraction for him.

"But that is not yet the worst," Vasily continued. "The hypnotic vibrations of the free-swimming ones in their multitude turn out to have a stimulating effect on any male who is near. Their sub-minds induce dreams of the piquant sort. Lev says that to make money for the work we must sell these dreams to rich men. I protest, but to no avail.

"Lev is maddened for money. Now besides selling the dreams I find he plans to sell the creatures themselves, sell them one by one, but keep enough to sell the dreams too. It is a madness."

The darkness had become that of night. The thunder continued to growl and now it seemed to Simon that it had music in it. Visions swam through his mind to its rhythm—hordes of swimming pygmy souls, of unborn

water babies, migrations of miniature mermaids. The pipe hanging between water tank and pent-shack became in his imagination a giant umbilicus or a canal for a monstrous multiple birth. Sitting beneath it, helpless to move, he focused his attention with increasing pleasure on the active, supple, ever more human girl-bodies that swam across his mind. Now more mermaid than tadpole, with bright smiling lips and eyes, long Lorelei-hair trailing behind them, they darted and hovered caressingly. In their wide-cheeked oval faces, he discovered without shock, there was a transcendent resemblance to the features of Grushenka Stulnikov-Gurevich—a younger, milk-skinned maiden of the steppes, with challenging eyes and figures that brushed against him with delightful shocks. . .

"So it is for me the great problem," Vasily's distant voice continued. "I see in my work only the pure research, the play of the mind. Lev sees money, Ivan sees dragon teeth—fodder for his political cannon—Mikhail sees unshriven souls, Grushenka sees—who knows?—madness. It is indeed one great problem."

Thunder came again, crashingly this time. The door of the pent-shack opened. Framed in it stood Ivan the Bomber. "Vasily!" he roared. "Do you know what that idiot is doing now?"

For a moment Simon thought he meant God.

Then as the thunder and Ivan's voice trailed off together, Simon became aware at last of the identity of the other sound, which had been growing in volume all the time.

Simultaneously Vasily struggled to his feet.

"The organ!" he cried. "Mikhail is *playing* the Whirlwind Music! We must stop him!" Pausing only for a last pull at the bottle, he charged into the pent-shack, following Ivan.

Wind was shaking the heavy pipe over Simon's head, tossing him back and forth in the chair. Looking with an effort toward the west, Simon saw the reason: a spinning black pencil of wind that was writing its way toward them in wreckage across the intervening roofs.

The chair fell under him. Stumbling across the roof, he tugged futilely at the door to the pent-shack, then threw himself flat, clawing at the tarpaper.

There was a mounting roar. The top of the water tank went spinning off like a flying saucer. Momentarily, as if it were a giant syringe, the whirlwind dipped into the tank. Simon felt himself sliding across the roof, felt his legs lifting. He fetched up against the roof's low wall and at that moment the wind let go of him and his legs touched tarpaper again.

Gaining his feet numbly, Simon staggered into the leaning pent-shack. The pale man was nowhere to be seen, the plush chair empty. The curtain at the other side of the room had fallen with its rods, revealing a bathtub more antique than Simon's. In the tub, under the window, sat Grushenka. The lightning flares showed her with her chin level with the water, her eyes placidly staring, her mouth opening and closing.

Simon found himself putting his arms around the black clad figure. With a straining effort he lifted her out of the tub, water sloshing all over his legs, and half carried, half slid with her down the stairs.

He fetched up panting and disheveled at the top landing, his attention riveted by the lightning-illuminated scene in the two-story-high living room below. At the far end of it a dark-robed figure crouched at the console of the mighty organ, like a giant bat at the base of the portico of a black and gold temple. In the center of the room Ivan was in the act of heaving above his head his globular leather case.

Mikhail darted a look over his shoulder and sprang to one side. The projectile crashed against the organ. Mikhail picked himself up, tearing something from his neck. Ivan lunged forward with a roar. Mikhail crashed a fist against his jaw. The Bomber went down and didn't come up. Mikhail unwrapped his crucifix from his fingers and resumed playing.

With a wild cry Simon heaved himself to his feet, stumbled over Grushenka's sodden garments, and pitched headlong down the stairs.

When he came to, the house was empty and the Stulnikov moving van was gone. At the front door he was met by a poker-faced young man who identified himself as a member of the FBI. Simon showed him the globular case Ivan had thrown at the organ. It proved to contain a bowling ball.

The young gentleman listened to his story without changing expression, thanked him warmly, and shooed him out.

The Stulnikov-Gureviches disappeared for good, though not quite without a trace. Simon found this item in the next evening's paper, the first of many he accumulated yearningly in a scrapbook during the following months:

MERMAID RAIN A HOAX,
SCIENTIST DECLARES

Milford, Pa.—The "mermaid rain" reported here has been declared a fraud by an eminent European biologist. Vasily Stulnikov-Gurevich, formerly Professor of Genetics at Pirc University, Latvia, passing through here on a cross-country trip, declared the miniature "mermaids" were "albino tadpoles, probably scattered about as a hoax by schoolboys."

The professor added, "I would like to know where they got them, however. There is clear evidence of mutation, due perhaps to fallout."

Dr. Stulnikov directed his party in a brief but intensive search for overlooked specimens. His charming silent sister, Grushenka Stulnikov, wearing a quaint Latvian swimming costume, explored the shallows of the Delaware.

After collecting as many specimens as possible, the professor and his assistants continued their trip in their unusual camping car. Dr. Stulnikov intends to found a biological research center "in the calm and tolerant atmosphere of the West Coast," he declared.

TIME FIGHTER

A REAL science-fiction enthusiast has to be a little crazy and a little sane, a little dreamy and a little skeptical, a little idealistic and also a little hard-headed. George Mercer inclined toward the first of each of these three pairs, which was why he fell for Dave Kantarian's time-traveling swindle.

George was well into middle age, rather tiredly married, and ran a small watch-repair and jewelry shop. The jewelry he made by hand satisfied only a fraction of his desire for self-expression, his wife did little to feed his yearning for romance, while voting once every two years did nothing to slake his thirst to be in on some great, undefined act of world-saving. The magazines he read and shelved meticulously left him restless, not sated. So he was ripe for becoming the victim of an adventurous, do-gooder swindle.

Not that Dave Kantarian wasn't an ingenious swindler, even though he chose an extremely bizarre field of operations. As one of the Treasury men later said, "Boy, if he had only stuck to uranium stock, cosmic-power generators, and gasoline from water!"

Dave turned up at the local science-fiction club with a half dozen magazines under his arm and a readiness to argue about the relative merits of anything from the Gray Lensman to *Playboy*. Next meeting he showed around a Heinlein manuscript and a Freas original. It was several weeks before he began to hint to George about supernormal powers and a mysterious mission. And it was only in George's room behind the shop, after carefully drawing the blinds and extracting a promise of secrecy, that he delicately parted his blond pompadour to expose two

quivering golden antennae capable of sending and receiving thought-messages across time (but unfortunately for test purposes, not across space).

Evidently Dave was a reasonably good parlor magician and mechanical gimmicker, for he made several small objects disappear into the future to Dave's satisfaction and he caused two clocks in Dave's shop to first gain and then lose ten minutes without any detectable intervention. Before George managed to check the clocks against anything but Dave's wristwatch the brief trip in time was over and Dave didn't repeat that demonstration; but the future smelled different, George noticed, and ten minutes later the same flowery odor wafted through the room.

After baring his antennae, Dave told all, which was simply this: Dave was a man from five thousand years in the future, fighting on the good side of an interstellar war which was being lost because the home base of Terra had run out of certain essential metals. These turned out to be nothing really difficult to obtain, such as uranium-235 or berkelium, but simply silver and gold, which Seventieth Century technology could transform into a non-corrosive armor far stronger than steel and harder than diamond. Dave had been briefed in the languages and customs of the Early Atomic Age and hustled back across the millennia to garner a supply of the desperately needed metals before they were impossibly dispersed by use. Now would George care to drop a suitable contribution into the time machine?

To understand why George fell for this story, one must remember his stifled romanticism, his sense of personal failure, his deep need to believe. The thing came to him like, or rather instead of, a religious conversion.

Also, one must not underrate the patient artistry of Dave's build-up, his fanatical attention to plausible touches, such as occasional lapses into an unintelligible and presumably future speech, his fierce looks of concentration as he received unheralded time-messages, and his assurance that George would eventually get a concrete token of gratitude from the embattled futurians—a

token which by its very nature would convince George that his contributions were really helpful. Indeed, the ingenuity Dave Kantarian lavished on a not very profitable swindle constitutes a secondary problem: was he really shrewd or merely devious?

For instance, was it sheer lack of imagination or a brilliant stroke of understatement that the contribution box for time-traveling riches was nothing but a cheap modern alarm clock with most of the mechanism removed, a hand-drawn diagram pasted inside, and a rather crude trap-door built in the top? Dave claimed that the gutted clock was simply a lens that focussed his mental power to send objects into the future—a power sufficient without focussing for short trips across time, but not a five-thousand-year voyage.

At any rate George came to believe and regular contributions of the purest silver and gold he could buy were put into the clock. Then Dave would carefully set the hands, his gaze would become trancelike, the clock would be hidden and Dave would depart, still glassy-eyed. The time transit might take place at once, Dave said, or in several hours, but the next morning when George opened the clock in Dave's presence, he would always find it empty and experience a deep thrill at the thought that the futurians were a little bit nearer winning the ultimate war against the powers of evil. On some mornings Dave seemed to share his sentiments completely, on others he was mysteriously irritated, almost as if he suspected George of tampering with the time-machine during the night.

Nevertheless, this generally blissful state of affairs might have continued indefinitely, except that the Treasury Department became interested in the tenfold increase in George's gold purchases and at about the same time George's wife noticed their depleted bank balance, got no satisfaction whatever from her husband, fumed and spied for a few days, and finally consulted a lawyer.

When the Treasury men interviewed George early one morning at his shop, he denied everything and made a pitiful effort to conceal his extreme terror, for Dave had

repeatedly warned him that the futurians' enemies were capable of sending back time-spies and saboteurs, who might appear in any guise.

Since unlike most cases there no obvious way in which the victim could hope to profit from the swindle himself, the Treasury men assumed that George was motivated by an unwillingness to admit that he had been duped. Despite their serious doubts of his sanity, they reasoned with him at length. They showed him what they had dug up about Dave: an unsavory record of petty confidence games, personal betrayals, generally unstable behavior, and grandiose schemes. They hinted that Dave had been preparing to pull the same swindle on other members of the science-fiction club. Still George stuck to his story—Dave was just a fellow science-fiction enthusiast—so the Treasury men called in his wife and things became quite nasty when she flatly called him a childish fool who had doped his mind with lurid magazines and finally fallen for a fairy tale and given away their savings to a cheap crook.

Then things got a bit nastier when the Treasury men sprang the news that late last night Dave had been scraped from a sidewalk in the local skid row and that there were indications he might have beeen pushed, perhaps by an enraged victim of his swindles, from the high window of a cheap hotel where he roomed. They threw down on George's small, glass-topped desk a duplicate key to his store which had been found on Dave and also the thought-transmitting antennae—thin brass wires set in flesh-colored plastic bases footed with tiny diagrams like that in the clock.

At this point George broke down and spilled the whole story: Dave's incredible claims, the quest for gold and silver to be transformed into metals harder than diamond, the alarm-clock time machine, everything. Fortunately George was able to refute the hinted accusation of murder. True, Dave had visited the shop early the previous evening, they had even put a contribution in the clock and Dave had set it; but after he departed some of George's regular science-fiction friends had dropped in and been

with him at the moment Dave had hurtled downward with a howl that one frightened bum on the sidewalk below described as sounding more like rage than fear.

But while George was making these helpful admissions, he was also asserting something that confirmed the Treasury men's suspicions of his sanity. While admitting that Dave was an out-and-out swindler and had used the duplicate key to come back secretly each night to loot the time machine, George maintained that the dead crook was still an agent of the futurians.

According to the new version, George had always sensed that there was something partly fishy about Dave's claims. Really the futurians couldn't time-travel themselves at all, they could merely send their thoughts ranging back across the centuries and sometimes manage small shipments of metal if there were a suitable sending station at the other end. They had fixed on Dave as such a suitable station. Without realizing that he was merely following their powerful mental suggestions, Dave had set up his swindle.

This would account, George pointed out excitedly, for Dave's fits of irritation and suspicion, which must have corresponded to the occasions when the time-traveling setup had actually worked, and also for Dave's suicide, induced by the realization that he, the supercriminal, was being inexplicably rooked.

The Treasury men were not buying anything like that, though they didn't tell George so right out. They even went along with him a bit, pretending to round out details and making a serious business out of examining the alarm clock, which had been filled with silver and gold the previous night. Sure enough, it was empty.

"No, wait a minute, there's something in it," one of them said, and shook out a tiny star-shaped button of dull metal with a pin attached to the back of it. He examined it, blinked, and put it down on the desk.

He wanted to say, "That Kantarian was certainly a crazy stickler for details. He told you, Mercer, that you would get a token of gratitude from the good guys, and sure enough he has a cheap button ready with 'Time

Fighter' engraved on it. Really pitiful, Mercer, the way he made you look like a kid sending off to a TV program for a spaceman's badge."

Instead he glanced at George's face and yielded to a rather unprofessional impulse. "Maybe you'd like to keep this," he said softly, shoving the button at him.

At that moment a puzzled look came into his face, but a second later he shrugged and followed the other man out of the shop.

George didn't miss it, however, because the light was right from where he was sitting. And because he didn't miss it, he was able to stand up bravely to the loss of his savings and even the endless reproaches of his wife. When things got rough, he merely would smile and glance inside his breast pocket, where he had pinned the cheap little "Time Fighter" button, now with a flat diamond set in the center of it—the dull metal star, one point of which had a golden gleam and, when lightly shoved across the desk, had made a deep scratch in the glass, and later, when George tested it, in the flat diamond.

THE 64-SQUARE MADHOUSE

I

SILENTLY, so as not to shock anyone with illusions about well dressed young women, Sandra Lea Grayling cursed the day she had persuaded the *Chicago Space Mirror* that there would be all sorts of human interest stories to be picked up at the first international grandmaster chess tournament in which an electronic computing machine was entered.

Not that there weren't enough humans around, it was the interest that was in doubt. The large hall was crammed with energetic dark-suited men of whom a disproportionately large number were bald, wore glasses, were faintly untidy and indefinably shabby, had Slavic or Scandinavian features, and talked foreign languages.

They yakked interminably. The only ones who didn't were scurrying individuals with the eager-zombie look of officials.

Chess sets were everywhere—big ones on tables, still bigger diagram-type electric ones on walls, small peg-in sets dragged from side pockets and manipulated rapidly as part of the conversational ritual and still smaller folding sets in which the pieces were the tiny magnetized disks used for playing in free-fall.

There were signs featuring largely mysterious combinations of letters: FIDE, WBM, USCF, USSF, USSR, and UNESCO. Sandra felt fairly sure about the last three.

The many clocks, bedside table size, would have struck a familiar note except that they had little red flags and wheels sprinkled over their faces and they were all in

pairs, two clocks to a case. That Siamese-twin clocks should be essential to a chess tournament struck Sandra as a particularly maddening circumstance.

Her last assignment had been to interview the pilot pair riding the first American manned circum-lunar satellite—and the five alternate pairs who hadn't made the flight. This tournament hall seemed to Sandra much further out of the world.

Overheard scraps of conversation in reasonably intelligible English were not particularly helpful. Samples:

"They say the Machine has been programmed to play nothing but pure Barcza System and Indian Defenses—and the Dragon Formation if anyone pushes the King Pawn."

"Hah! In that case . . ."

"The Russians have come with ten trunkfuls of prepared variations and they'll gang up on the Machine at adjournments. What can one New Jersey computer do against four Russian grandmasters?"

"I heard the Russians have been programmed—with hypnotic cramming and somno-briefing. Votbinnik had a nervous breakdown."

"Why, the Machine hasn't even a *Haupturnier* or an intercollegiate won. It'll over its head be playing."

"Yes, but maybe like Capa at San Sebastian or Morphy or Willie Angler at New York. The Russians will look like potzers."

"Have you studied the scores of the match between Moon Base and Circum-Terra?"

"Not worth the trouble. The play was feeble. Barely Expert Rating."

Sandra's chief difficulty was that she knew absolutely nothing about the game of chess—a point that she had slid over in conferring with the powers at the *Space Mirror*, but that now had begun to weigh on her. How wonderful it would be, she dreamed, to walk out this minute, find a quiet bar and get pie-eyed in an evil, ladylike way.

"Perhaps mademoiselle would welcome a drink?"

"You're durn tootin' she would!" Sandra replied in a

rush, and then looked down apprehensively at the person who had read her thoughts.

It was a small sprightly elderly man who looked like a somewhat thinned down Peter Lorre—there was that same impression of the happy Slavic elf. What was left of his white hair was cut very short, making a silvery nap. His pince-nez had quite thick lenses. But in sharp contrast to the somberly clad men around them, he was wearing a pearl-gray suit of almost exactly the same shade as Sandra's—a circumstance that created for her the illusion that they were fellow conspirators.

"Hey, wait a minute," she protested just the same. He had already taken her arm and was piloting her toward the nearest flight of low wide stairs. "How did you know I wanted a drink?"

"I could see that mademoiselle was having difficulty swallowing," he replied, keeping them moving. "Pardon me for feasting my eyes on your lovely throat."

"I didn't suppose they'd serve drinks here."

"But of course." They were already mounting the stairs. "What would chess be without coffee or schnapps?"

"Okay, lead on," Sandra said. "You're the doctor."

"Doctor?" He smiled widely. "You know, I like being called that."

"Then the name is yours as long as you want it—Doc."

Meanwhile the happy little man had edged them into the first of a small cluster of tables, where a dark-suited jabbering trio was just rising. He snapped his fingers and hissed through his teeth. A white-aproned waiter materialized.

"For myself black coffee," he said. "For mademoiselle rhine wine and seltzer?"

"That'd go fine." Sandra leaned back. "Confidentially, Doc, I *was* having trouble swallowing . . . well, just about everything here."

He nodded. "You are not the first to be shocked and horrified by chess," he assured her. "It is a curse of the intellect. It is a game for lunatics—or else it creates them.

But what brings a sane and beautiful young lady to this 64-square madhouse?"

Sandra briefly told him her story and her predicament. By the time they were served, Doc had absorbed the one and assessed the other.

"You have one great advantage," he told her. "You know nothing whatsoever of chess—so you will be able to write about it understandably for your readers." He swallowed half his demitasse and smacked his lips. "As for the Machine—you *do* know, I suppose, that it is not a humanoid metal robot, walking about clanking and squeaking like a late medieval knight in armor?"

"Yes, Doc, but . . ." Sandra found difficulty in phrasing the question.

"Wait." He lifted a finger. "I think I know what you're going to ask. You want to know why, if the Machine works at all, it doesn't work perfectly, so that it always wins and there is no contest. Right?"

Sandra grinned and nodded. Doc's ability to interpret her mind was as comforting as the bubbly, mildly astringent mixture she was sipping.

He removed his pince-nez, massaged the bridge of his nose and replaced them.

"If you had," he said, "a billion computers all as fast as the Machine, it would take them all the time there ever will be in the universe just to play through all the possible games of chess, not to mention the time needed to classify those games into branching families of wins for White, wins for Black and draws, and the additional time required to trace out chains of key-moves leading always to wins. So the Machine can't play chess like God. What the Machine can do is examine all the likely lines of play for about eight moves ahead—that is, four moves each for White and Black—and then decide which is the best move on the basis of capturing enemy pieces, working toward checkmate, establishing a powerful central position and so on."

"That sounds like the way a man would play a game," Sandra observed. "Look ahead a little way and try to

make a plan. You know, like getting out trumps in bridge or setting up a finesse."

"Exactly!" Doc beamed at her approvingly. "The Machine *is* like a man. A rather peculiar and not exactly pleasant man. A man who always abides by sound principles, who is utterly incapable of flights of genius, but who never makes a mistake. You see, you are finding human interest already, even in the Machine."

Sandra nodded. "Does a human chess player—a grandmaster, I mean—ever look eight moves ahead in a game?"

"Most assuredly he does! In crucial situations, say where there's a chance of winning at once by trapping the enemy king, he examines many more moves ahead than that—thirty or forty even. The Machine is probably programmed to recognize such situations and do something of the same sort, though we can't be sure from the information World Business Machines has released. But in most chess positions the possibilities are so very nearly unlimited that even a grandmaster can only look a very few moves ahead and must rely on his judgment and experience and artistry. The equivalent of those in the Machine is the directions fed into it before it plays a game."

"You mean the programming?"

"Indeed yes! The programming is the crux of the problem of the chess-playing computer. The first practical model, reported by Bernstein and Roberts of IBM in 1958 and which looked four moves ahead, was programmed so that it had a greedy worried tendency to grab at enemy pieces and to retreat its own whenever they were attacked. It had a personality like that of a certain kind of chess-playing dub—a dull-brained woodpusher afraid to take the slightest risk of losing material—but a dub who could almost always beat an utter novice. The WBM machine here in the hall operates about a million times as fast. Don't ask me how, I'm no physicist, but it depends on the new transistors and something they call hypervelocity, which in turn depends on keeping parts of the Machine at a temperature near absolute zero. However, the result is that the Machine can see eight moves ahead and is capable of being programmed much more craftily."

"A million times as fast as the first machine, you say, Doc? And yet it only sees twice as many moves ahead?" Sandra objected.

"There is a geometrical progression involved there," he told her with a smile. "Believe me, eight moves ahead is a lot of moves when you remember that the Machine is errorlessly examining every one of thousands of variations. Flesh-and-blood chess masters have lost games by blunders they could have avoided by looking only one or two moves ahead. The Machine will make no such oversights. Once again, you see, you have the human factor, in this case working for the Machine."

"Savilly, I have been looking allplace for you!"

A stocky, bull-faced man with a great bristling shock of black, gray-flecked hair had halted abruptly by their table. He bent over Doc and began to whisper explosively in a guttural foreign tongue.

II

Sandra's gaze traveled beyond the balustrade. Now that she could look down at it, the central hall seemed less confusedly crowded. In the middle, toward the far end, were five small tables spaced rather widely apart and with a chessboard and men and a pair of the Siamese clocks set out on each. To either side of the hall were tiers of temporary seats, about half of them occupied. There were at least as many more people still wandering about.

On the far wall was a big electric scoreboard and also, above the corresponding tables, five large dully glassy chessboards, the White squares in light gray, the Black squares in dark.

One of the five wall chessboards was considerably larger than the other four—the one above the Machine.

Sandra looked with quickening interest at the console of the Machine—a bank of keys and some half-dozen panels of rows and rows of tiny telltale lights, all dark at the moment. A thick red velvet cord on little brass standards ran around the Machine at a distance of about ten feet. Inside the cord were only a few gray-smocked men. Two

of them had just laid a black cable to the nearest chess table and were attaching it to the Siamese clock.

Sandra tried to think of a being who always checked everything, but only within limits beyond which his thoughts never ventured, and who never made a mistake . . .

"Miss Grayling! May I present to you Igor Jandorf."

She turned back quickly with a smile and a nod.

"I should tell you, Igor," Doc continued, "that Miss Grayling represents a large and influential Midwestern newspaper. Perhaps you have a message for her readers."

The shock-headed man's eyes flashed. "I most certainly do!" At that moment the waiter arrived with a second coffee and wine-and-seltzer. Jandorf seized Doc's new demitasse, drained it, set it back on the tray with a flourish and drew himself up.

"Tell your readers, Miss Grayling," he proclaimed, fiercely arching his eyebrows at her and actually slapping his chest, "that I, Igor Jandorf, will defeat the Machine by the living force of my human personality! Already I have offered to play it an informal game blindfold—I, who have played 50 blindfold games simultaneously! Its owners refuse me. I have challenged it also to a few games of rapid-transit—an offer no true grandmaster would dare ignore. Again they refuse me. I predict that the Machine will play like a great oaf—at least against *me*. Repeat: I, Igor Jandorf, by the living force of my human personality, will defeat the Machine. Do you have that? You can remember it?"

"Oh yes," Sandra assured him, "but there are some other questions I very much want to ask you, Mr. Jandorf."

"I am sorry, Miss Grayling, but I must clear my mind now. In ten minutes they start the clocks."

While Sandra arranged for an interview with Jandorf after the day's playing session, Doc reordered his coffee.

"One expects it of Jandorf," he explained to Sandra with a philosophic shrug when the shock-headed man was gone. "At least he didn't take your wine-and-seltzer. Or

did he? One tip I have for you: don't call a chess master Mister, call him Master. They all eat it up."

"Gee, Doc, I don't know how to thank you for everything. I hope I haven't offended Mis—Master Jandorf so that he doesn't—"

"Don't worry about that. Wild horses couldn't keep Jandorf away from a press interview. You know, his rapid-transit challenge was cunning. That's a minor variety of chess where each player gets only ten seconds to make a move. Which I don't suppose would give the Machine time to look three moves ahead. Chess players would say that the Machine has a very slow sight of the board. This tournament is being played at the usual international rate of 15 moves an hour, and—"

"Is that why they've got all those crazy clocks?" Sandra interrupted.

"Oh, yes. Chess clocks measure the time each player takes in making his moves. When a player makes a move he presses a button that shuts his clock off and turns his opponent's on. If a player uses too much time, he loses as surely as if he were checkmated. Now since the Machine will almost certainly be programmed to take an equal amount of time on successive moves, a rate of 15 moves an hour means it will have 4 minutes a move—and it will need every second of them! Incidentally it was typical Jandorf bravado to make a point of a blindfold challenge —just as if the Machine weren't playing blindfold itself. Or *is* the Machine blindfold? How do you think of it?"

"Gosh, I don't know. Say, Doc, is it really true that Master Jandorf has played 50 games at once blindfolded? I can't believe that."

"Of course not!" Doc assured her. "It was only 49 and he lost two of those and drew five. Jandorf always exaggerates. It's in his blood."

"He's one of the Russians, isn't he?" Sandra asked. "Igor?"

Doc chuckled. "Not exactly," he said gently. "He is originally a Pole and now he has Argentinian citizenship. You have a program, don't you?"

Sandra started to hunt through her pocketbook, but just then two lists of names lit up on the big electric scoreboard.

THE PLAYERS

William Angler, USA
Bela Grabo, Hungary
Ivan Jal, USSR
Igor Jandorf, Argentina
Dr. S. Krakatower, France
Vassily Lysmov, USSR
The Machine, USA (programmed by Simon Great)
Maxim Serek, USSR
Moses Sherevsky, USA
Mikhail Votbinnik, USSR
Tournament Director: Dr. Jan Vanderhoef

FIRST ROUND PAIRINGS

Sherevski vs. Serek
Jal vs. Angler
Jandorf vs. Votbinnik
Lysmov vs. Krakatower
Grabo vs. Machine

"Cripes, Doc, they all sound like they were Russians," Sandra said after a bit. "Except this Willie Angler. Oh, he's the boy wonder, isn't he?"

Doc nodded. "Not such a boy any longer, though. He's . . . Well, speak to the Devil's children . . . Miss Grayling, I have the honor of presenting to you the only grandmaster ever to have been ex-chess-champion of the United States while still technically a minor—Master William Augustus Angler."

A tall, sharply-dressed young man with a hatchet face pressed the old man back into his chair.

"How are you, Savvy, old boy old boy?" he demanded. "Still chasing the girls, I see."

"Please, Willie, get off me."

"Can't take it, huh?" Angler straightened up somewhat.

"Hey waiter! Where's that chocolate malt? I don't want it *next* year. About that *ex-*, though. I was swindled, Savvy. I was robbed."

"Willie!" Doc said with some asperity. "Miss Grayling is a journalist. She would like to have a statement from you as to how you will play against the Machine."

Angler grinned and shook his head sadly. "Poor old Machine," he said. "I don't know why they take so much trouble polishing up that pile of tin just so that I can give it a hit in the head. I got a hatful of moves it'll burn out all its tubes trying to answer. And if it gets too fresh, how about you and me giving its low-temperature section the hotfoot, Savvy? The money WBM's putting up is okay, though. That first prize will just fit the big hole in my bank account."

"I know you haven't the time now, Master Angler," Sandra said rapidly, "but if after the playing session you could grant me—"

"Sorry, babe," Angler broke in with a wave of dismissal. "I'm dated up for two months in advance. Waiter! I'm here, not there!" And he went charging off.

Doc and Sandra looked at each other and smiled.

"Chess masters aren't exactly humble people, are they?" she said.

Doc's smile became tinged with sad understanding. "You must excuse them, though," he said. "They really get so little recognition or recompense. This tournament is an exception. And it takes a great deal of ego to play greatly."

"I suppose so. So World Business Machines is responsible for this tournament?"

"Correct. Their advertising department is interested in the prestige. They want to score a point over their great rival."

"But if the Machine plays badly it will be a black eye for them," Sandra pointed out.

"True," Doc agreed thoughtfully. "WBM must feel very sure . . . It's the prize money they've put up, of course, that's brought the world's greatest players here. Otherwise half of them would be holding off in the best tem-

peramental-artist style. For chess players the prize money is fabulous—$35,000, with $15,000 for first place, and all expenses paid for all players. There's never been anything like it. Soviet Russia is the only country that has ever supported and rewarded her best chess players at all adequately. I think the Russian players are here because UNESCO and FIDE (that's *Federation Internationale des Echecs*—the international chess organization) are also backing the tournament. And perhaps because the Kremlin is hungry for a little prestige now that its space program is sagging."

"But if a Russian doesn't take first place it will be a black eye for them."

Doc frowned. "True, in a sense. *They* must feel very sure . . . Here they are now."

III

Four men were crossing the center of the hall, which was clearing, toward the tables at the other end. Doubtless they just happened to be going two by two in close formation, but it gave Sandra the feeling of a phalanx.

"The first two are Lysmov and Votbinnik," Doc told her. "It isn't often that you see the current champion of the world—Votbinnik—and an ex-champion arm in arm. There are two other persons in the tournament who have held that honor—Jal and Vanderhoef the director, way back."

"Will whoever wins this tournament become champion?"

"Oh no. That's decided by two-player matches—a very long business—after elimination tournaments between leading contenders. This tournament is a round robin: each player plays one game with every other player. That means nine rounds."

"Anyway there *are* an awful lot of Russians in the tournament," Sandra said, consulting her program. "Four out of ten have USSR after them. And Bela Grabo, Hungary—that's a satellite. And Sherevsky and Krakatower are Russian-sounding names."

"The proportion of Soviet to American entries in the tournament represents pretty fairly the general difference in playing strength between the two countries," Doc said judiciously. "Chess mastery moves from land to land with the years. Way back it was the Moslems and the Hindus and Persians. Then Italy and Spain. A little over a hundred years ago it was France and England. Then Germany, Austria and the New World. Now it's Russia—including of course the Russians who have run away from Russia. But don't think there aren't a lot of good Anglo-Saxon types who are masters of the first water. In fact, there are a lot of them here around us, though perhaps you don't think so. It's just that if you play a lot of chess you get to looking Russian. Once it probably made you look Italian. Do you see that short bald-headed man?"

"You mean the one facing the Machine and talking to Jandorf?"

"Yes. Now that's one with a lot of human interest. Moses Sherevsky. Been champion of the United States many times. A very strict Orthodox Jew. Can't play chess on Fridays or on Saturdays before sundown." He chuckled. "Why, there's even a story going around that one rabbi told Sherevsky it would be unlawful for him to play against the Machine because it is technically a *golem*—the clay Frankenstein's monster of Hebrew legend."

Sandra asked, "What about Grabo and Krakatower?"

Doc gave a short scornful laugh. "Krakatower! Don't pay any attention to *him*. A senile has-been, it's a scandal he's been allowed to play in this tournament! He must have pulled all sorts of strings. Told them that his lifelong services to chess had won him the honor and that they had to have a member of the so-called Old Guard. Maybe he even got down on his knees and cried—and all the time his eyes on that expense money and the last-place consolation prize! Yet dreaming schizophrenically of beating them all! Please, don't get me started on Dirty Old Krakatower."

"Take it easy, Doc. He sounds like he would make an interesting article. Can you point him out to me?"

"You can tell him by his long white beard with coffee-stains. I don't see it anywhere, though. Perhaps he's shaved it off for the occasion. It would be like that antique womanizer to develop senile delusions of youthfulness."

"And Grabo?" Sandra pressed, suppressing a smile at the intensity of Doc's animosity.

Doc's eyes grew thoughtful. "About Bela Grabo (why are three out of four Hungarians named Bela?) I will tell you only this: That he is a very brilliant player and that the Machine is very lucky to have drawn him as its first opponent."

He would not amplify his statement. Sandra studied the scoreboard again.

"This Simon Great who's down as programming the Machine. He's a famous physicist, I suppose?"

"By no means. That was the trouble with some of the early chess-playing machines—they were programmed by scientists. No, Simon Great is a psychologist who at one time was a leading contender for the world's chess championship. I think WBM was surprisingly shrewd to pick him for the programming job. Let me tell you— No, better yet—"

Doc shot to his feet, stretched an arm on high and called out sharply, "Simon!"

A man some four tables away waved back and a moment later came over.

"What is it, Savilly?" he asked. "There's hardly any time, you know."

The newcomer was of middle height, compact of figure and feature, with graying hair cut short and combed sharply back.

Doc spoke his piece for Sandra.

Simon Great smiled thinly. "Sorry," he said, "But I am making no predictions and we are giving out no advance information on the programming of the Machine. As you know, I have had to fight the Players' Committee tooth and nail on all sorts of points about that and they have won most of them. I am not permitted to re-program the Machine at adjournments—only between games (I did insist

on that and get it!) And if the Machine breaks down during a game, its clock keeps running on it. My men are permitted to make repairs—if they can work fast enough."

"That makes it very tough on you," Sandra put in. "The Machine isn't allowed any weaknesses."

Great nodded soberly. "And now I must go. They've almost finished the count-down, as one of my technicians keeps on calling it. Very pleased to have met you, Miss Grayling—I'll check with our PR man on that interview. Be seeing you, Savvy."

The tiers of seats were filled now and the central space almost clear. Officials were shooing off a few knots of lingerers. Several of the grandmasters, including all four Russians, were seated at their tables. Press and company cameras were flashing. The four smaller wallboards lit up with the pieces in the opening position—white for White and red for Black. Simon Great stepped over the red velvet cord and more flash bulbs went off.

"You know, Doc," Sandra said, "I'm a dog to suggest this, but what if this whole thing were a big fake? What if Simon Great were really playing the Machine's moves? There would surely be some way for his electricians to rig—"

Doc laughed happily—and so loudly that some people at the adjoining tables frowned.

"Miss Grayling, that is a wonderful idea! I will probably steal it for a short story. I still manage to write and place a few in England. No, I do not think that is at all likely. WBM would never risk such a fraud. Great is completely out of practice for actual tournament play, though not for chess-thinking. The difference in style between a computer and a man would be evident to any expert. Great's own style is remembered and would be recognized—though, come to think of it, his style was often described as being machine-like . . ." For a moment Doc's eyes became thoughtful. Then he smiled again. "But no, the idea is impossible. Vanderhoef as Tournament Director has played two or three games with the Machine to assure himself that it operates legitimately and has grandmaster skill."

"Who won?" Sandra asked.

Doc shrugged. "The scores weren't released. It was very hush-hush. But about your idea, Miss Grayling—did you ever read about Maelzel's famous chessplaying automaton of the 19th Century? That one too was supposed to work by machinery (cogs and gears, not electricity) but actually it had a man hidden inside it—your Edgar Poe exposed the fraud in a famous article. In *my* story I think the chess robot will break down while it is being demonstrated to a millionaire purchaser and the young inventor will have to win its game for it to cover up and swing the deal. Only the millionaire's daughter, who is really a better player than either of them . . . yes, yes! Your Ambrose Bierce too wrote a story about a chessplaying robot of the clickety-clank-grr kind who murdered his creator, crushing him like an iron grizzly bear when the man won a game from him. Tell me, Miss Grayling, do you find yourself imagining this Machine putting out angry tendrils to strangle its opponents, or beaming rays of death and hypnotism at them? I can imagine . . ."

While Doc chattered happily on about chessplaying robots and chess stories, Sandra found herself thinking about him. A writer of some sort evidently and a terrific chess buff. Perhaps he was an actual medical doctor. She'd read something about two or three coming over with the Russian squad. But Doc certainly didn't sound like a Soviet citizen.

He was older than she'd first assumed. She could see that now that she was listening to him less and looking at him more. Tired, too. Only his dark-circled eyes shone with unquenchable youth. A useful old guy, whoever he was. An hour ago she'd been sure she was going to muff this assignment completely and now she had it laid out cold. For the umpteenth time in her career Sandra shied away from the guilty thought that she wasn't a writer at all or even a reporter, she just used dime-a-dozen female attractiveness to rope a susceptible man (young, old, American, Russian) and pick his brain . . .

She realized suddenly that the whole hall had become very quiet.

Doc was the only person still talking and people were looking at them disapprovingly. All five wall-boards were lit up and the changed position of a few pieces showed that opening moves had been made on four of them, including the Machine's. The central space between the tiers of seats was completely clear now, except for one man hurrying across it in their direction with the rapid yet quiet, almost tip-toe walk that seemed to mark all the officials. *Like morticians' assistants,* she thought. He rapidly mounted the stairs and halted at the top to look around searchingly. His gaze lighted on their table, his eyebrows went up, and he made a beeline for Doc. Sandra wondered if she should warn him that he was about to be shushed.

The official laid a hand on Doc's shoulder. "Sir!" he said agitatedly. "Do you realize that they've started your clock, Dr. Krakatower?"

Sandra became aware that Doc was grinning at her. "Yes, it's true enough, Miss Grayling," he said. "I trust you will pardon the deception, though it was hardly one, even technically. Every word I told you about Dirty Old Krakatower is literally true. Except the long white beard —he never wore a beard after he was 35—that part was an out-and-out lie! Yes, yes! I will be along in a moment! Do not worry, the spectators will get their money's worth out of me! And WBM did not with its expense account buy my soul—that belongs to the young lady here."

Doc rose, lifted her hand and kissed it. "Thank you, mademoiselle, for a charming interlude. I hope it will be repeated. Incidentally, I should say that besides. . . (Stop pulling at me, man!—there can't be five minutes on my clock yet!). . . that besides being Dirty Old Krakatower, grandmaster emeritus, I am also the special correspondent of the *London Times.* It is always pleasant to chat with a colleague. Please do not hesitate to use in your articles any of the ideas I tossed out, if you find them worthy—I sent in my own first dispatch two hours ago. Yes, yes, I come! Au revoir, mademoiselle!"

He was at the bottom of the stairs when Sandra jumped up and hurried to the balustrade.

"Hey, Doc!" she called.

He turned.

"Good luck!" she shouted and waved.

He kissed his hand to her and went on.

People glared at her then and a horrified official came hurrying. Sandra made big frightened eyes at him, but she couldn't quite hide her grin.

IV

Sitzfleisch (which roughly means endurance—"sitting flesh" or "buttock meat") is the quality needed above all others by tournament chess players—and their audiences.

After Sandra had watched the games (the players' faces, rather—she had a really good pair of zoomer glasses) for a half hour or so, she had gone to her hotel room, written her first article (interview with the famous Dr. Krakatower), sent it in and then come back to the hall to see how the games had turned out.

They were still going on, all five of them.

The press section was full, but two boys and a girl of high-school age obligingly made room for Sandra on the top tier of seats and she tuned in on their whispered conversation. The jargon was recognizably related to that which she'd gotten a dose of on the floor, but gamier. Players did not sacrifice pawns, they sacked them. No one was ever defeated, only busted. Pieces weren't lost but blown. The Ruy Lopez was the Dirty Old *Rooay*—and incidentally a certain set of opening moves named after a long-departed Spanish churchman, she now discovered from Dave, Bill and Judy, whose sympathetic help she won by frequent loans of her zoomer glasses.

The four-hour time control point—two hours and 30 moves for each player—had been passed while she was sending in her article, she learned, and they were well on their way toward the next control point—an hour more and 15 moves for each player—after which unfinished games would be adjourned and continued at a special morning session. Sherevsky had had to make 15 moves in two minutes after taking an hour earlier on just one

move. But that was nothing out of the ordinary, Dave had assured her in the same breath, Sherevsky was always letting himself get into "fantastic time-pressure" and then wriggling out of it brilliantly. He was apparently headed for a win over Serek. *Score one for the USA over the USSR,* Sandra thought proudly.

Votbinnik had Jandorf practically in *Zugzwang* (his pieces all tied up, Bill explained) and the Argentinian would be busted shortly. Through the glasses Sandra could see Jandorf's thick chest rise and fall as he glared murderously at the board in front of him. By contrast Votbinnik looked like a man lost in reverie.

Dr. Krakatower had lost a pawn to Lysmov but was hanging on grimly. However, Dave would not give a plugged nickle for his chances against the former world's champion, because "those old ones always weaken in the sixth hour."

"You for-get the bio-logical mir-acle of Doc-tor Lasker," Bill and Judy chanted as one.

"Shut up," Dave warned them. An official glared angrily from the floor and shook a finger. Much later Sandra discovered that Dr. Emanuel Lasker was a philosopher-mathematician who, after holding the world's championship for 26 years, had won a very strong tournament (New York 1924) at the age of 56 and later almost won another (Moscow 1935) at the age of 67.

Sandra studied Doc's face carefully through her glasses. He looked terribly tired now, almost a death's head. Something tightened in her chest and she looked away quickly.

The Angler-Jal and Grabo-Machine games were still ding-dong contests, Dave told her. If anything, Grabo had a slight advantage. The Machine was "on the move," meaning that Grabo had just made a move and was waiting the automaton's reply.

The Hungarian was about the most restless "waiter" Sandra could imagine. He twisted his long legs constantly and writhed his shoulders and about every five seconds he ran his hands back through his unkempt tassle of hair.

Once he yawned self-consciously, straightened himself and sat very compactly. But almost immediately he was writhing again.

The Machine had its own mannerisms, if you could call them that. Its dim, unobtrusive telltale lights were winking on and off in a fairly rapid, random pattern. Sandra got the impression that from time to time Grabo's eyes were trying to follow their blinking, like a man watching fireflies.

Simon Great sat impassively behind a bare table next to the Machine, his five gray-smocked technicians grouped around him.

A flushed-faced, tall, distinguished-looking elderly gentleman was standing by the Machine's console. Dave told Sandra it was Dr. Vanderhoef, the Tournament Director, one-time champion of the world.

"Another old potzer like Krakatower, but with sense enough to know when he's licked," Bill characterized harshly.

"Youth, ah, un-van-quishable youth," Judy chanted happily by herself. "Flashing like a meteor across the chess fir-ma-ment. Morphy, Angler, Judy Kaplan . . ."

"Shut up! They really will throw us out," Dave warned her and then explained in whispers to Sandra that Vanderhoef and his assistants had the nervous-making job of feeding into the Machine the moves made by its opponent, "so everyone will know it's on the level, I guess." He added, "It means the Machine loses a few seconds every move, between the time Grabo punches the clock and the time Vanderhoef gets the move fed into the Machine."

Sandra nodded. The players were making it as hard on the Machine as possible, she decided with a small rush of sympathy.

Suddenly there was a tiny movement of the gadget attached from the Machine to the clocks on Grabo's table and a faint *click*. But Grabo almost leapt out of his skin.

Simultaneously a red castle-topped piece (one of the Machine's rooks, Sandra was informed) moved four

squares sideways on the big electric board above the Machine. An official beside Dr. Vanderhoef went over to Grabo's board and carefully moved the corresponding piece. Grabo seemed about to make some complaint, then apparently thought better of it and plunged into brooding cogitation over the board, elbows on the table, both hands holding his head and fiercely massaging his scalp.

The Machine let loose with an unusually rapid flurry of blinking. Grabo straightened up, seemed again about to make a complaint, then once more to repress the impulse. Finally he moved a piece and punched his clock. Dr. Vanderhoef immediately flipped four levers on the Machine's console and Grabo's move appeared on the electric board.

Grabo sprang up, went over to the red velvet cord and motioned agitatedly to Vanderhoef.

There was a short conference, inaudible at the distance, during which Grabo waved his arms and Vanderhoef grew more flushed. Finally the latter went over to Simon Great and said something, apparently with some hesitancy. But Great smiled obligingly, sprang to his feet, and in turn spoke to his technicians, who immediately fetched and unfolded several large screens and set them in front of the Machine, masking the blinking lights. *Blindfolding it,* Sandra found herself thinking.

Dave chuckled. "That's already happened once while you were out," he told Sandra. "I guess seeing the lights blinking makes Grabo nervous. But then *not* seeing them makes him nervous. Just watch."

"The Machine has its own mysterious pow-wow-wers," Judy chanted.

"That's what you think," Bill told her. "Did you know that Willie Angler has hired Evil Eye Bixel out of Brooklyn to put the whammy on the Machine? S'fact."

". . . pow-wow-wers unknown to mere mortals of flesh and blood—"

"Shut up!" Dave hissed. "Now you've done it. Here comes old Eagle Eye. Look, I don't know you two. I'm with this lady here."

Bela Grabo was suffering acute tortures. He had a winning attack, he knew it. The Machine was counter-attacking, but unstrategically, desperately, in the style of a Frank Marshall complicating the issue and hoping for a swindle. All Grabo had to do, he knew, was keep his head and *not blunder*—not throw away a queen, say, as he had to old Vanderhoef at Brussels, or overlook a mate in two, as he had against Sherevsky at Tel Aviv. The memory of those unutterably black moments and a dozen more like them returned to haunt him. Never if he lived a thousand years would he be free of them.

For the tenth time in the last two minutes he glanced at his clock. He had fifteen minutes in which to make five moves. He wasn't in time-pressure, he must remember that. He mustn't make a move on impulse, he mustn't let his treacherous hand leap out without waiting for instructions from its guiding brain.

First prize in this tournament meant incredible wealth —transportation money and hotel bills for more than a score of future tournaments. But more than that, it was one more chance to blazon before the world his true superiority rather than the fading reputation of it. "... Bela Grabo, brilliant but erratic..." Perhaps his last chance.

When, in the name of Heaven, was the Machine going to make its next move? Surely it had already taken more than four minutes! But a glance at its clock showed him that hardly half that time had gone by. He decided he had made a mistake in asking again for the screens. It was easier to watch those damned lights blink than have them blink in his imagination.

Oh, if chess could only be played in intergalactic space, in the black privacy of one's thoughts. But there had to be the physical presence of the opponent with his (possibly deliberate) unnerving mannerisms—Lasker and his cigar, Capablanca and his red necktie, Nimzowitsch and his nervous contortions (very like Bela Grabo's, though the latter did not see it that way). And now this ghastly flashing, humming, stinking, button-banging metal monster!

Actually, he told himself, he was being asked to play two opponents, the Machine and Simon Great, a sort of consultation team. It wasn't fair!

The Machine hammered its button and rammed its queen across the electric board. In Grabo's imagination it was like an explosion.

Grabo held onto his nerves with an effort and plunged into a maze of calculations.

Once he came to, like a man who has been asleep, to realize that he was wondering whether the lights were still blinking behind the screens while he was making his move. Did the Machine really analyze at such times or were the lights just an empty trick? He forced his mind back to the problems of the game, decided on his move, checked the board twice for any violent move he might have missed, noted on his clock that he'd taken five minutes, checked the board again very rapidly and then put out his hand and made his move—with the fiercely suspicious air of a boss compelled to send an extremely unreliable underling on an all-important errand.

Then he punched his clock, sprang to his feet, and once more waved for Vanderhoef.

Thirty seconds later the Tournament Director, very red-faced now, was saying in a low voice, almost pleadingly, "But Bela, I cannot keep asking them to change the screens. Already they have been up twice and down once to please you. Moving them disturbs the other players and surely isn't good for your own peace of mind. Oh, Bela, my dear Bela—"

Vanderhoef broke off. Grabo knew he had been going to say something improper but from the heart, such as, "For God's sake don't blow this game out of nervousness now that you have a win in sight"—and this sympathy somehow made the Hungarian furious.

"I have other complaints which I will make formally after the game," he said harshly, quivering with rage. "It is a disgrace the way that mechanism punches the time-clock button. It will crack the case! The Machine never

stops humming! And it stinks of ozone and hot metal, as if it were about to explode!"

"It *cannot* explode, Bela. Please!"

"No, but it threatens to! And you know a threat is always more effective than an actual attack! As for the screens, they must be taken down at once, I demand it!"

"Very well, Bela, very well, it will be done. Compose yourself."

Grabo did not at once return to his table—he could not have endured to sit still for the moment—but paced along the line of tables, snatching looks at the other games in progress. When he looked back at the big electric board, he saw that the Machine had made a move although he hadn't heard it punch the clock.

He hurried back and he studied the board without sitting down. Why, the Machine had made a *stupid* move, he saw with a rush of exaltation. At that moment the last screen being folded started to fall over, but one of the gray-smocked men caught it deftly. Grabo flinched and his hand darted out and moved a piece.

He heard someone gasp. Vanderhoef.

It got very quiet. The four soft clicks of the move being fed into the Machine were like the beat of a muffled drum.

There was a buzzing in Grabo's ears. He looked down at the board in horror.

The Machine blinked, blinked once more and then, although barely twenty seconds had elapsed, moved a rook.

On the glassy gray margin above the Machine's electric board, large red words flamed on:

CHECK! AND MATE IN THREE

Up in the stands Dave squeezed Sandra's arm. "He's done it! He's let himself be swindled."

"You mean the Machine has beaten Grabo?" Sandra asked.

"What else?"

"Can you be sure? Just like that?"

"Of cour . . . Wait a second . . . Yes, I'm sure."

"Mated in three like a potzer," Bill confirmed.

"The poor old boob," Judy sighed.

Down on the floor Bela Grabo sagged. The assistant director moved toward him quickly. But then the Hungarian straightened himself a little.

"I resign," he said softly.

The red words at the top of the board were wiped out and briefly replaced, in white, by:

THANK YOU FOR A GOOD GAME

And then a third statement, also in white, flashed on for a few seconds:

YOU HAD BAD LUCK

Bela Grabo clenched his fists and bit his teeth. Even *the Machine* was being sorry for him!

He stiffly walked out of the hall. It was a long, long walk.

V

Adjournment time neared. Serek, the exchange down but with considerable time on his clock, sealed his forty-sixth move against Sherevsky and handed the envelope to Vanderhoef. It would be opened when the game was resumed at the morning session. Dr. Krakatower studied the position on his board and then quietly tipped over his king. He sat there for a moment as if he hadn't the strength to rise. Then he shook himself a little, smiled, got up, clasped hands briefly with Lysmov and wandered over to watch the Angler-Jal game.

Jandorf had resigned his game to Votbinnik some minutes ago, rather more surlily.

After a while Angler sealed a move, handing it to

Vanderhoef with a grin just as the little red flag dropped on his clock, indicating he'd used every second of his time.

Up in the stands Sandra worked her shoulders to get a kink out of her back. She'd noticed several newsmen hurrying off to report in the Machine's first win. She was thankful that her job was limited to special articles.

"Chess is a pretty intense game," she remarked to Dave.

He nodded. "It's a killer. I don't expect to live beyond forty myself."

"Thirty," Bill said.

"Twenty-five is enough time to be a meteor," said Judy.

Sandra thought to herself: *the Unbeat Generation.*

Next day Sherevsky played the Machine to a dead-level ending. Simon Great offered a draw for the Machine (over an unsuccessful interfering protest from Jandorf that this constituted making a move for the Machine) but Sherevsky refused and sealed his move.

"He wants to have it proved to him that the Machine can play end games," Dave commented to Sandra up in the stands. "I don't blame him."

At the beginning of today's session Sandra had noticed that Bill and Judy were following each game in a very new-looking book they shared jealously between them. *Won't look new for long,* Sandra had thought.

"That's the 'Bible' they got there," Dave had explained. "MCO—*Modern Chess Openings.* It lists all the best open-moves in chess, thousands and thousands of variations. That is, what masters *think* are the best moves. The moves that have won in the past, really. We chipped in together to buy the latest edition—the 13th—just hot off the press," he had finished proudly.

Now with the Machine-Sherevsky ending the center of interest, the kids were consulting another book, one with grimy, dog-eared pages.

"That's the 'New Testament'—*Basic Chess Endings,*" Dave said when he noticed her looking. "There's so much you must know in endings that it's amazing the Machine can play them at all. I guess as the pieces get fewer it starts to look deeper."

Sandra nodded. She was feeling virtuous. She had got her interview with Jandorf and then this morning one with Grabo ("How it Feels to Have a Machine Out-Think You"). The latter had made her think of herself as a real vulture of the press, circling over the doomed. The Hungarian had seemed in a positively suicidal depression.

One newspaper article made much of the Machine's "psychological tactics," hinting that the blinking lights were designed to hypnotize opponents. The general press coverage was somewhat startling. A game that in America normally rated only a fine-print column in the back sections of a very few Sunday papers was now getting boxes on the front page. The defeat of a man by a machine seemed everywhere to awaken nervous feelings of insecurity, like the launching of the first sputnik.

Sandra had rather hesitantly sought out Dr. Krakatower during the close of the morning session of play, still feeling a little guilty from her interview with Grabo. But Doc had seemed happy to see her and quite recovered from last night's defeat, though when she had addressed him as "Master Krakatower" he had winced and said, "Please, not that!" Another session of coffee and wine-and-seltzer had resulted in her getting an introduction to her first Soviet grandmaster, Serek, who had proved to be unexpectedly charming. He had just managed to draw his game with Sherevsky (to the great amazement of the kibitzers, Sandra learned) and was most obliging about arranging for an interview.

Not to be outdone in gallantry, Doc had insisted on escorting Sandra to her seat in the stands—at the price of once more losing a couple of minutes on his clock. As a result her stock went up considerably with Dave, Bill and Judy. Thereafter they treated anything she had to say with almost annoying deference—Bill especially, probably in penance for his thoughtless cracks at Doc. Sandra later came to suspect that the kids had privately decided that she was Dr. Krakatower's mistress—probably a new one because she was so scandalously ignorant of chess. She did not disillusion them.

Doc lost again in the second round—to Jal.

In the third round Lysmov defeated the Machine in 27 moves. There was a flaring of flashbulbs, a rush of newsmen to the phones, jabbering in the stands and much comment and analysis that was way over Sandra's head—except she got the impression that Lysmov had done something tricky.

The general emotional reaction in America, as reflected by the newspapers, was not too happy. One read between the lines that for the Machine to beat a man was bad, but for a Russian to beat an American machine was worse. A widely-read sports columnist, two football coaches, and several rural politicians announced that chess was a morbid game played only by weirdies. Despite these thick-chested he-man statements, the elusive mood of insecurity deepened.

Besides the excitement of the Lysmov win, a squabble had arisen in connection with the Machine's still-unfinished end game with Sherevsky, which had been continued through one morning session and was now headed for another.

Finally there were rumors that World Business Machines was planning to replace Simon Great with a nationally famous physicist.

Sandra begged Doc to try to explain it all to her in kindergarten language. She was feeling uncertain of herself again and quite subdued after being completely rebuffed in her efforts to get an interview with Lysmov, who had fled her as if she were a threat to his Soviet virtue.

Doc on the other hand was quite vivacious, cheered by his third-round draw with Jandorf.

"Most willingly, my dear," he said. "Have you ever noticed that kindergarten language can be far honester than the adult tongues? Fewer fictions. Well, several of us hashed over the Lysmov game until three o'clock this morning. Lysmov wouldn't though. Neither would Votbinnik or Jal. You see, I have my communication problems with the Russians too.

"We finally decided that Lysmov had managed to guess with complete accuracy both the depth at which the Machine is analyzing in the opening and middle game (ten

moves ahead instead of eight, we think—a prodigious achievement!) and also the main value scale in terms of which the Machine selects its move.

"Having that information, Lysmov managed to play into a combination which would give the Machine a maximum plus value in its value scale (win of Lysmov's queen, it was) after ten moves but a checkmate for Lysmov on his second move *after* the first ten. A human chess master would have seen a trap like that, but the Machine could not, because Lysmov was maneuvering in an area that did not exist for the Machine's perfect but limited mind. Of course the Machine changed its tactics after the first three moves of the ten had been played—it could see the checkmate then—but by that time it was too late for it to avert a disastrous loss of material. It was tricky of Lysmov, but completely fair. After this we'll all be watching for the opportunity to play the same sort of trick on the Machine.

"Lysmov was the first of us to realize fully that *we are not playing against a metal monster but against a certain kind of programming.* If there are any weaknesses we can spot in that programming, we can win. Very much in the same way that we can again and again defeat a flesh-and-blood player when we discover that he consistently attacks without having an advantage in position or is regularly overcautious about launching a counter-attack when he himself is attacked without justification."

Sandra nodded eagerly. "So from now on your chances of beating the Machine should keep improving, shouldn't they? I mean as you find out more and more about the programming."

Doc smiled. "You forget," he said gently, "that Simon Great can change the programming before each new game. Now I see why he fought so hard for that point."

"Oh. Say, Doc, what's this about the Sherevsky end game?"

"You are picking up the language, aren't you?" he observed. "Sherevsky got a little angry when he discovered that Great had the Machine programmed to analyze

steadily on the next move after an adjournment until the game was resumed next morning. Sherevsky questioned whether it was fair for the Machine to 'think' all night while its opponent had to get some rest. Vanderhoef decided for the Machine, though Sherevsky may carry the protest to FIDE.

"Bah— I think Great wants us to get heated up over such minor matters, just as he is happy (and oh so obliging!) when we complain about how the Machine blinks or hums or smells. It keeps our minds off the main business of trying to outguess his programming. Incidentally, that is one thing we decided last night—Sherevsky, Willie Angler, Jandorf, Serek, and myself—that we are all going to have to learn to play the Machine without letting it get on our nerves and without asking to be protected from it. As Willie puts it, 'So suppose it sounds like a boiler factory even—okay, you can think in a boiler factory.' Myself, I am not so sure of that, but his spirit is right."

Sandra felt herself perking up as a new article began to shape itself in her mind. She said, "And what about WBM replacing Simon Great?"

Again Doc smiled. "I think, my dear, that you can safely dismiss that as just a rumor. I think that Simon Great has just begun to fight."

VI

Round Four saw the Machine spring the first of its surprises.

It had finally forced a draw against Sherevsky in the morning session, ending the long second-round game, and now was matched against Votbinnik.

The Machine opened Pawn to King Four, Votbinnik replied Pawn to King Three.

"The French Defense, Binny's favorite," Dave muttered and they settled back for the Machine's customary four-minute wait.

Instead the Machine moved at once and punched its clock.

Sandra, studying Votbinnik through her glasses, de-

cided that the Russian grandmaster looked just a trifle startled. Then he made his move.

Once again the Machine responded instantly.

There was a flurry of comment from the stands and a scurrying-about of officials to shush it. Meanwhile the Machine continued to make its moves at better than rapid-transit speed, although Votbinnik soon began to take rather more time on his.

The upshot was that the Machine made eleven moves before it started to take time to 'think' at all.

Sandra clamored so excitedly to Dave for an explanation that she had two officials waving at her angrily.

As soon as he dared, Dave whispered, "Great must have banked on Votbinnik playing the French—almost always does—and fed all the variations of the French into the Machine's 'memory' from MCO and maybe some other books. So long as Votbinnik stuck to a known variation of the French, why, the Machine could play from memory without analyzing at all. Then when a strange move came along—one that wasn't in its memory—only on the twelfth move yet!—the Machine went back to analyzing, only now it's taking longer and going deeper because it's got more time—six minutes a move, about. The only thing I wonder is why Great didn't have the Machine do it in the first three games. It seems so obvious."

Sandra ticketed that in her mind as a question for Doc. She slipped off to her room to write her "Don't Let a Robot Get Your Goat" article (drawing heavily on Doc's observations) and got back to the stands twenty minutes before the second time-control point. It was becoming a regular routine.

Votbinnik was a knight down—almost certainly busted, Dave explained.

"It got terrifically complicated while you were gone," he said. "A real Votbinnik position."

"Only the Machine out-binniked him," Bill finished.

Judy hummed Beethoven's "Funeral March for the Death of a Hero."

Nevertheless Votbinnik did not resign. The Machine sealed a move. Its board blacked out and Vanderhoef,

with one of his assistants standing beside him to witness, privately read the move off a small indicator on the console. Tomorrow he would feed the move back into the Machine when play was resumed at the morning session.

Doc sealed a move too although he was two pawns down in his game against Grabo and looked tired to death.

"They don't give up easily, do they?" Sandra observed to Dave. "They must really love the game. Or do they hate it?"

"When you get to psychology it's all beyond me," Dave replied. "Ask me something else."

Sandra smiled. "Thank you, Dave," she said. "I will."

Come the morning session, Votbinnik played on for a dozen moves then resigned.

A little later Doc managed to draw his game with Grabo by perpetual check. He caught sight of Sandra coming down from the stands and waved to her, then made the motions of drinking.

Now he looks almost like a boy, Sandra thought as she joined him.

"Say, Doc," she asked when they had secured a table, "why is a rook worth more than a bishop?"

He darted a suspicious glance at her. "That is not your kind of question," he said sternly. "Exactly what have you been up to?"

Sandra confessed that she had asked Dave to teach her how to play chess.

"I knew those children would corrupt you," Doc said somberly. "Look, my dear, if you learn to play chess you won't be able to write your clever little articles about it. Besides, as I warned you the first day, chess is a madness. Women are ordinarily immune, but that doesn't justify you taking chances with your sanity."

"But I've kind of gotten interested, watching the tournament," Sandra objected. "At least I'd like to know how the pieces move."

"Stop!" Doc commanded. "You're already in danger. Direct your mind somewhere else. Ask me a sensible

down-to-earth journalist's question—something completely irrational!"

"Okay, why didn't Simon Great have the Machine set to play the openings fast in the first three games?"

"Hah! I think Great plays Lasker-chess in his programming. He hides his strength and tries to win no more easily than he has to, so he will have resources in reserve. The Machine loses to Lysmov and immediately starts playing more strongly—the psychological impression made on the other players by such tactics is formidable."

"But the Machine isn't ahead yet?"

"No, of course not. After four rounds Lysmov is leading the tournament with 3½ – ½, meaning 3½ in the win column and ½ in the loss column . . ."

"How do you half win a game of chess? Or half lose one?" Sandra interrupted.

"By drawing a game—playing to a tie. Lysmov's 3½ – ½ is notational shorthand for three wins and a draw. Understand? My dear, I don't usually have to explain things to you in such detail."

"I just didn't want you to think I was learning too much about chess."

"Ho! Well, to get on with the score after four rounds, Angler and Votbinnik both have 3 – 1, while the Machine is bracketed at 2½ – 1½ with Jal. But the Machine has created an impression of strength, as if it were all set to come from behind with a rush." He shook his head. "At the moment, my dear," he said, "I feel very pessimistic about the chances of neurons against relays in this tournament. Relays don't panic and fag. But the oddest thing . . ."

"Yes?" Sandra prompted.

"Well, the oddest thing is that the Machine doesn't play 'like a machine' at all. It uses dynamic strategy, the kind we sometimes call 'Russian,' complicating each position as much as possible and creating maximum tension. But that too is a matter of the programming . . ."

Doc's foreboding was fulfilled as round followed hard-fought round. In the next five days (there was a week-

end recess) the Machine successively smashed Jandorf, Serek and Jal and after seven rounds was out in front by a full point.

Jandorf, evidently impressed by the Machine's flawless opening play against Votbinnik, chose an inferior line in the Ruy Lopez to get the Machine "out of the books." Perhaps he hoped that the Machine would go on blindly making book moves, but the Machine did not oblige. It immediately slowed its play, "thought hard" and annihilated the Argentinian in 25 moves.

Doc commented, "The Wild Bull of the Pampas tried to use the living force of his human personality to pull a fast one and swindle the Machine. Only the Machine didn't swindle."

Against Jal, the Machine used a new wrinkle. It used a variable amount of time on moves, apparently according to how difficult it "judged" the position to be.

When Serek got a poor pawn-position the Machine simplified the game relentlessly, suddenly discarding its hitherto "Russian" strategy. "It plays like anything but a machine," Doc commented. "We know the reason all too well— Simon Great—but doing something about it is something else again. Great is hitting at our individual weaknesses wonderfully well. Though I think I could play brilliant psychological chess myself if I had a machine to do the detail work." Doc sounded a bit wistful.

The audiences grew in size and in expensiveness of wardrobe, though most of the cafe society types made their visits fleeting ones. Additional stands were erected. A hard-liquor bar was put in and then taken out. The problem of keeping reasonable order and quiet became an unending one for Vanderhoef, who had to ask for more "hushers." The number of scientists and computer men in attendance increased. Navy, Army and Space Force uniforms were more in evidence. Dave and Bill turned up one morning with a three-dimensional chess set of transparent plastic and staggered Sandra by assuring her that most bright young space scientists were moderately adept at this 512-square game.

Sandra heard that WBM had snagged a big order from

the War Department. She also heard that a Syndicate man had turned up with a book on the tournament, taking bets from the more heavily heeled types and that a detective was circulating about, trying to spot him.

The newspapers kept up their front-page reporting, most of the writers personalizing the Machine heavily and rather too cutely. Several of the papers started regular chess columns and "How to Play Chess" features. There was a flurry of pictures of movie starlets and such sitting at chess boards. Hollywood revealed plans for two chess movies: "They Made Her a Black Pawn" and "The Monster From King Rook Square." Chess novelties and costume jewelry appeared. The United States Chess Federation proudly reported a phenomenal rise in membership.

Sandra learned enough chess to be able to blunder through a game with Dave without attempting more than one illegal move in five, to avoid the Scholar's Mate most of the time and to be able to checkmate with two rooks though not with one. Judy had asked her, "Is *he* pleased that you're learning chess?"

Sandra had replied, "No, he thinks it is a madness." The kids had all whooped at that and Dave had said, "How right he is!"

Sandra was scraping the bottom of the barrel for topics for her articles, but then it occurred to her to write about the kids, which worked out nicely, and that led to a humorous article "Chess Is for Brains" about her own efforts to learn the game, and for the nth time in her career she thought of herself as practically a columnist and was accordingly elated.

After his two draws, Doc lost three games in a row and still had the Machine to face and then Sherevsky. His 1 — 6 score gave him undisputed possession of last place. He grew very depressed. He still made a point of squiring her about before the playing sessions, but she had to make most of the conversation. His rare flashes of humor were rather macabre.

"They have Dirty Old Krakatower locked in the cellar," he muttered just before the start of the next to the last

round, "and now they send the robot down to destroy him."

"Just the same, Doc," Sandra told him, "good luck."

Doc shook his head. "Against a man luck might help. But against a Machine?"

"It's not the Machine you're playing, but the programming. Remember?"

"Yes, but it's the Machine that doesn't make the mistake. And a mistake is what I need most of all today. Somebody else's."

Doc must have looked very dispirited and tired when he left Sandra in the stands, for Judy (Dave and Bill not having arrived yet) asked in a confidential, womanly sort of voice, "What do you do for him when he's so unhappy?"

"Oh, I'm especially passionate," Sandra heard herself answer.

"Is that good for him?" Judy demanded doubtfully.

"Shl" Sandra said, somewhat aghast at her irresponsibility and wondering if *she* were getting tournament-nerves. "Sh, they're starting the clocks."

VII

Krakatower had lost two pawns when the first time-control point arrived and was intending to resign on his 31st move when the Machine broke down. Three of its pieces moved on the electric board at once, then the board went dark and all the lights on the console went out except five which started winking like angry red eyes. The gray-smocked men around Simon Great sprang silently into action, filing around back of the console. It was the first work anyone had seen them do except move screens around and fetch each other coffee. Vanderhoef hovered anxiously. Some flash bulbs went off. Vanderhoef shook his fist at the photographers. Simon Great did nothing. The Machine's clock ticked on. Doc watched for a while and then fell asleep.

When Vanderhoef jogged him awake, the Machine had just made its next move, but the repair-job had taken 50 minutes. As a result the Machine had to make 15 moves

in 10 minutes. At 40 seconds a move it played like a dub whose general lack of skill was complicated by a touch of insanity. On his 43rd move Doc shrugged his shoulders apologetically and announced mate in four. There were more flashes. Vanderhoef shook his fist again. The machine flashed:

YOU PLAYED BRILLIANTLY.
CONGRATULATIONS!

Afterwards Doc said sourly to Sandra. "And *that* was one big lie—a child could have beat the Machine with that time advantage. Oh, what an ironic glory the gods reserved for Krakatower's dotage—to vanquish a broken-down computer! Only one good thing about it—that it didn't happen while it was playing one of the Russians, or someone would surely have whispered *sabotage*. And that is something of which they do not accuse Dirty Old Krakatower, because they are sure he has not got the brains even to think to sprinkle a little magnetic oxide powder in the Machine's memory box. Bah!"

Just the same he seemed considerably more cheerful.

Sandra said guilelessly, "Winning a game means nothing to you chess players, does it, unless you really do it by your own brilliancy?"

Doc looked solemn for a moment, then he started to chuckle. "You are getting altogether too smart, Miss Sandra Lea Grayling," he said. "Yes, yes—a chess player is happy to win in any barely legitimate way he can, by an earthquake if necessary, or his opponent sickening before he does from the bubonic plague. So— I confess it to you— I was very happy to chalk up my utterly undeserved win over the luckless Machine."

"Which incidentally makes it anybody's tournament again, doesn't it, Doc?"

"Not exactly." Doc gave a wry little headshake. "We can't expect another fluke. After all, the Machine has functioned perfectly seven games out of eight, and you can bet the WBM men will be checking it all night,

especially since it has no adjourned games to work on. Tomorrow it plays Willie Angler, but judging from the way it beat Votbinnik and Jal, it should have a definite edge on Willie. If it beats him, then only Votbinnik has a chance for a tie and to do that he must defeat Lysmov. Which will be most difficult."

"Well," Sandra said, "don't you think that Lysmov might just kind of let himself be beaten, to make sure a Russian gets first place or at least ties for it?"

Doc shook his head emphatically. "There are many things a man, even a chess master, will do to serve his state, but party loyalty doesn't go that deep. Look, here is the standing of the players after eight rounds." He handed Sandra a penciled list.

ONE ROUND TO GO

Player	*Wins*	*Losses*
Machine	5½	2½
Votbinnik	5½	2½
Angler	5	3
Jal	4½	3½
Lysmov	4½	3½
Serek	4½	3½
Sherevsky	4	4
Jandorf	2½	5½
Grabo	2	6
Krakatower	2	6

LAST ROUND PAIRINGS

Machine vs. Angler
Votbinnik vs. Lysmov
Jal vs. Serek
Sherevsky vs. Krakatower
Jandorf vs. Grabo

After studying the list for a while, Sandra said, "Hey, even Angler could come out first, couldn't he, if he beat the Machine and Votbinnik lost to Lysmov?"

"Could, could—yes. But I'm afraid that's hoping for too much, barring another breakdown. To tell the truth, dear, the Machine is simply too good for all of us. If it were only a little faster (and these technological improvements always come) it would outclass us completely. We are at that fleeting moment of balance when genius is almost good enough to equal mechanism. It makes me feel sad, but proud too in a morbid fashion, to think that I am in at the death of grandmaster chess. Oh, I suppose the game will always be played, but it won't ever be quite the same." He blew out a breath and shrugged his shoulders.

"As for Willie, he's a good one and he'll give the Machine a long hard fight, you can depend on it. He might conceivably even draw."

He touched Sandra's arm. "Cheer up, my dear," he said. "You should remind yourself that a victory for the Machine is still a victory for the USA."

Doc's prediction about a long hard fight was decidedly not fulfilled.

Having White, the Machine opened Pawn to King Four and Angler went into the Sicilian Defense. For the first twelve moves on each side both adversaries pushed their pieces and tapped their clocks at such lightning speed (Vanderhoef feeding in Angler's moves swiftly) that up in the stands Bill and Judy were still flipping pages madly in their hunt for the right column in MCO.

The Machine made its thirteenth move, still at blitz tempo.

"Bishop takes Pawn, check, and mate in three!" Willie announced very loudly, made the move, banged his clock and sat back.

There was a collective gasp-and-gabble from the stands.

Dave squeezed Sandra's arm hard. Then for once forgetting that he was Dr. Caution, he demanded loudly of Bill and Judy, "Have you two idiots found that column yet? *The Machine's thirteenth move is a boner!*"

Pinning down the reference with a fingernail, Judy cried, "Yes! Here it is on page 161 in footnote (e) (2)

(B). Dave, *that same thirteenth move for White is in the book!* But Black replies Knight to Queen Two, not Bishop takes Pawn, check. And three moves later the book gives White a plus value."

"What the heck, it can't be," Bill asserted.

"But it *is*. Check for yourself. *That boner is in the book.*"

"Shut up, everybody!" Dave ordered, clapping his hands to his face. When he dropped them a moment later his eyes gleamed. "I got it now! Angler figured they were using the latest edition of MCO to program the Machine on openings, he found an editorial error and then he deliberately played the Machine into that variation!"

Dave practically shouted his last words, but that attracted no attention as at that moment the whole hall was the noisiest it had been throughout the tournament. It simmered down somewhat as the Machine flashed a move.

Angler replied instantly.

The Machine replied almost as soon as Angler's move was fed into it.

Angler moved again, his move was fed into the Machine and the Machine flashed:

I AM CHECKMATED.
CONGRATULATIONS!

VIII

Next morning Sandra heard Dave's guess confirmed by both Angler and Great. Doc had spotted them having coffee and a malt together and he and Sandra joined them.

Doc was acting jubilant, having just drawn his adjourned game with Sherevsky, which meant, since Jandorf had beaten Grabo, that he was in undisputed possession of Ninth Place. They were all waiting for the finish of the Votbinnik-Lysmov game, which would decide the final standing of the leaders. Willie Angler was complacent and Simon Great was serene and at last a little more talkative.

"You know, Willie," the psychologist said, "I was afraid

that one of you boys would figure out something like that. That was the chief reason I didn't have the Machine use the programmed openings until Lysmov's win forced me to. *I* couldn't check every opening line in MCO and the *Archives* and *Shakhmaty*. There wasn't time. As it was, we had a dozen typists and proofreaders busy for weeks preparing that part of the programming and making sure it was accurate as far as following the books went. Tell the truth now, Willie, how many friends did you have hunting for flaws in the latest edition of MCO?"

Willie grinned. "Your unlucky 13th. Well, that's my secret. Though I've always said that anyone joining the Willie Angler Fan Club ought to expect to have to pay some day for the privilege. They're sharp, those little guys, and I work their tails off."

Simon Great laughed and said to Sandra, "Your young friend Dave was pretty sharp himself to deduce what had happened so quickly. Willie, you ought to have him in the Bleeker Street Irregulars."

Sandra said, "I get the impression he's planning to start a club of his own."

Angler snorted. "That's the one trouble with *my* little guys. They're all waiting to topple me."

Simon Great said, "Well, so long as Willie is passing up Dave, I want to talk to him. It takes real courage in a youngster to question authority."

"How should he get in touch with you?" Sandra asked.

While Great told her, Willie studied them frowningly.

"Si, are you planning to stick in this chess-programming racket?" he demanded.

Simon Great did not answer the question. "You try telling me something, Willie," he said. "Have you been approached the last couple of days by IBM?"

"You mean asking me to take over your job?"

"I said *I*BM, Willie."

"Oh." Willie's grin became a tight one. "I'm not talking."

There was a flurry of sound and movement around the playing tables. Willie sprang up.

"Lysmov's agreed to a draw!" he informed them a moment later. "The gangster!"

"Gangster because he puts you in equal first place with Votbinnik, both of you ahead of the Machine?" Great inquired gently.

"Ahh, he could have beat Binny, giving me sole first. A Russian gangster!"

Doc shook a finger. "Lysmov could also have *lost* to Votbinnik, Willie, putting you in second place."

"Don't think evil thoughts. So long, pals."

As Angler clattered down the stairs, Simon Great signed the waiter for more coffee, lit a fresh cigarette, took a deep drag and leaned back.

"You know," he said "it's a great relief not to have to impersonate the hyperconfident programmer for awhile. Being a psychologist has spoiled me for that sort of thing. I'm not as good as I once was at beating people over the head with my ego."

"You didn't do too badly," Doc said.

"Thanks. Actually, WBM is very much pleased with the Machine's performance. The Machine's flaws made it seem more real and more newsworthy, especially how it functioned when the going got tough—those repairs the boys made under time pressure in your game, Savilly, will help sell WBM computers or I miss my guess. In fact nobody could have watched the tournament for long without realizing there were nine smart rugged men out there, ready to kill that computer if they could. The Machine passed a real test. And then the whole deal dramatizes what computers are and what they can and can't do. And not just at the popular level. The WBM research boys are learning a lot about computer and programming theory by studying how the Machine and its programmer behave under tournament stress. It's a kind of test unlike that provided by any other computer work. Just this morning, for instance, one of our big mathematicians told me that he is beginning to think that the Theory of Games *does* apply to chess, because you can bluff and counterbluff with your programming. And *I'm* learning about human psychology."

Doc chuckled. "Such as that even human thinking is just a matter of how you program your own mind?—that we're all like the Machine to that extent?"

"That's one of the big points, Savilly. Yes."

Doc smiled at Sandra. "You wrote a nice little news-story, dear, about how Man conquered the Machine by a palpitating nose and won a victory for international amity.

"Now the story starts to go deeper."

"A lot of things go deeper," Sandra replied, looking at him evenly. "Much deeper than you ever expect at the start."

The big electric scoreboard lit up.

FINAL STANDING

Player	*Wins*	*Losses*
Angler	6	3
Votbinnik	6	3
Jal	5½	3½
Machine	5½	3½
Lysmov	5	4
Serek	4½	4½
Sherevsky	4½	4½
Jandorf	3½	5½
Krakatower	2½	6½
Grabo	2	7

"It was a good tournament," Doc said. "And the Machine has proven itself a grandmaster. It must make you feel good, Simon, after being out of tournament chess for twenty years."

The psychologist nodded.

"Will you go back to psychology now?" Sandra asked him.

Simon Great smiled. "I can answer that question honestly, Miss Grayling, because the news is due for release. No. WBM is pressing for entry of the Machine in the Interzonal Candidates' Tournament. They want a crack at the World's Championship."

Doc raised his eyebrows. "That's news indeed. But look, Simon, with the knowledge you've gained in this tournament won't you be able to make the Machine almost a sure winner in every game?"

"I don't know. Players like Angler and Lysmov may find some more flaws in its functioning and dream up some new stratagems. Besides, there's another solution to the problems raised by having a single computer entered in a grandmaster tournament."

Doc sat up straight. "You mean having more programmer-computer teams than just one?"

"Exactly. The Russians are bound to give their best players computers, considering the prestige the game has in Russia. And I wasn't asking Willie that question about IBM just on a hunch. Chess tournaments are a wonderful way to test rival computers and show them off to the public, just like cross-country races were for the early automobiles. The future grandmaster will inevitably be a programmer-computer team, a man-machine symbiotic partnership, probably with more freedom each way than I was allowed in this tournament—I mean the man taking over the play in some positions, the machine in others."

"You're making my head swim," Sandra said.

"Mine is in the same storm-tossed ocean," Doc assured her. "Simon, that will be very fine for the masters who can get themselves computers—either from their governments or from hiring out to big firms. Or in other ways. Jandorf, I'm sure, will be able to interest some Argentinian millionaire in a computer for him. While I . . . oh, I'm too old . . . still, when I start to think about it. . . But what about the Bela Grabos? Incidentally, did you know that Grabo is contesting Jandorf's win? Claims Jandorf discussed the position with Serek. I think they exchanged about two words."

Simon shrugged, "The Bela Grabos will have to continue to fight their own battles, if necessary satisfying themselves with the lesser tournaments. Believe me, Savilly, from now on grandmaster chess without one or more computers entered will lack sauce."

Dr. Krakatower shook his head and said, "Thinking gets more expensive every year."

From the floor came the harsh voice of Igor Jandorf and the shrill one of Bela Grabo raised in anger. Three words came through clearly: ". . . I challenge you . . ."

Sandra said, "Well, there's something you can't build into a machine—ego."

"Oh, I don't know about that," said Simon Great.

BREAD OVERHEAD

AS a blisteringly hot but guaranteed weather-controlled future summer day dawned on the Mississippi Valley, the walking mills of Puffy Products ("Spike to Loaf in One Operation!") began to tread delicately on their centipede legs across the wheat fields of Kansas.

The walking mills resembled fat metal serpents, rather larger than those Chinese paper dragons animated by files of men in procession. Sensory robot devices in their noses informed them that the waiting wheat had reached ripe perfection.

As they advanced, their heads swung lazily from side to side, very much like snakes, gobbling the yellow grain. In their throats, it was threshed, the chaff bundled and burped aside for pickup by the crawl trucks of a chemical corporation, the kernels quick-dried and blown along into the mighty chests of the machines. There the tireless mills ground the kernels to flour, which was instantly sifted, the bran being packaged and dropped like the chaff for pickup.

A cluster of tanks which gave the metal serpents a decidedly humpbacked appearance added water, shortening, salt and other ingredients, some named and some not. The dough was at the same time infused with gas from a tank conspicuously labeled "Carbon Dioxide" ("No Yeast Creatures in Your Bread!").

Thus instantly risen, the dough was clipped into loaves and shot into radionic ovens forming the midsections of the metal serpents. There the bread was baked in a matter of seconds, a fierce heat front browning the crusts, and the piping-hot loaves sealed in transparent plastic

bearing the proud Puffyloaf emblem (two cherubs circling a floating loaf) and ejected onto the delivery platform at each serpent's rear end, where a cluster of pickup machines, like hungry piglets, snatched at the loaves with hygienic claws.

A few loaves would be hurried off for the day's consumption, the majority stored for winter in strategically located mammoth deep freezes.

But now, behold a wonder! As loaves began to appear on the delivery platform of the first walking mill to get into action, they did not linger on the conveyor belt, but rose gently into the air and slowly traveled off downwind across the hot rippling fields.

The robot claws of the pickup machines clutched in vain, and, not noticing the difference, proceeded carefully to stack emptiness, tier by tier. One errant loaf, rising more sluggishly than its fellows, was snagged by a thrusting claw. The machine paused, clumsily wiped off the injured loaf, set it aside—where it bobbed on one corner, unable to take off again—and went back to the work of storing nothingness.

A flock of crows rose from the trees of a nearby shelterbelt as the flight of loaves approached. The crows swooped to investigate and then suddenly scattered, screeching in panic.

The helicopter of a hangoverish Sunday traveler bound for Wichita shied very similarly from the brown fliers and did not return for a second look.

A black-haired housewife spied them over her back fence, crossed herself and grabbed her walkie-talkie from the laundry basket. Seconds later, the yawning correspondent of a regional newspaper was jotting down the lead of a humorous news story which, recalling the old flying-saucer scares, stated that now apparently bread was to be included in the mad aerial tea party.

The congregation of an open-walled country church, standing up to recite the most familiar of Christian prayers, had just reached the petition for daily sustenance, when a sub-flight of the loaves, either forced down by a

vagrant wind or lacking the natural buoyancy of the rest, came coasting silently as the sunbeams between the graceful pillars at the altar end of the building.

Meanwhile, the main flight, now augmented by other bread flocks from scores and hundreds of walking mills that had started work a little later, mounted slowly and majestically into the cirrus flecked upper air, where a steady wind was blowing strongly toward the east.

About one thousand miles farther on in that direction, where a cluster of stratosphere-tickling towers marked the location of the metropolis of NewNew York, a tender scene was being enacted in the pressurized penthouse managerial suite of Puffy Products. Megera Winterly, Secretary in Chief to the Managerial Board and referred to by her underlings as the Blonde Icicle, was dealing with the advances of Roger ("Racehorse") Snedden, Assistant Secretary to the Board and often indistinguishable from any passing office boy.

"Why don't you jump out the window, Roger, remembering to shut the airlock after you?" the Golden Glacier said in tones not unkind. "When are your highstrung, thoroughbred nerves going to accept the fact that I would never consider marriage with a business inferior? You have about as much chance as a starving Ukrainian kulak now that Moscow's clapped on the interdict."

Roger's voice was calm, although his eyes were feverishly bright, as he replied, "A lot of things are going to be different around here, Meg, as soon as the Board is forced to admit that only my quick thinking made it possible to bring the name of Puffyloaf in front of the whole world."

"Puffyloaf could do with a little of that," the business girl observed judiciously. "The way sales have been plummeting, it won't be long before the Government deeds our desks to the managers of Fairy Bread and asks us to take the Big Jump. But just where does your quick thinking come into this, Mr. Snedden? You can't be referring to the helium—that was Rose Thinker's brainwave."

She studied him suspiciously. "You've birthed another

promotional bumble, Roger. I can see it in your eyes. I only hope it's not as big a one as when you put the Martian ambassador on 3D and he thanked you profusely for the gross of Puffyloaves, assuring you that he'd never slept on a softer mattress in all his life on two planets."

"Listen to me, Meg. Today—yes, today!—you're going to see the Board eating out of my hand."

"Hah! I guarantee you won't have any fingers left. You're bold enough now, but when Mr. Gryce and those two big machines come through that door—"

"Now wait a minute, Meg—"

"Hush! They're coming now!"

Roger leaped three feet in the air, but managed to land without a sound and edged toward his stool. Through the dilating iris of the door strode Phineas T. Gryce, flanked by Rose Thinker and Tin Philosopher.

The man approached the conference table in the center of the room with measured pace and gravely expressionless face. The rose-tinted machine on his left did a couple of impulsive pirouettes on the way and twittered a greeting to Meg and Roger. The other machine quietly took the third of the high seats and lifted a claw at Meg, who now occupied a stool twice the height of Roger's.

"Miss Winterly, please—our theme."

The Blonde Icicle's face thawed into a little-girl smile as she chanted bubblingly:

> *"Made up of tiny wheaten motes*
> *And reinforced with sturdy oats,*
> *It rises through the air and floats—*
> *The bread on which all Terra dotes!"*

"Thank you, Miss Winterly," said Tin Philosopher. "Though a purely figurative statement, that bit about rising through the air always gets me—here." He rapped his midsection, which gave off a high musical *clang*.

"Ladies—" he inclined his photocells toward Rose Thinker and Meg—"and gentlemen. This is a historic occasion in Old Puffy's long history, the inauguration of the helium-filled loaf ('So Light It Almost floats Away!') in

which that inert and heaven-aspiring gas replaces old-fashioned carbon dioxide. Later, there will be kudos for Rose Thinker, whose bright relays genius-sparked the idea, and also for Roger Snedden, who took care of the details.

"By the by, Racehorse, that was a brilliant piece of work getting the helium out of the government—they've been pretty stuffy lately about their monopoly. But first I want to throw wide the casement in your minds that opens on the Long View of Things."

Rose Thinker spun twice on her chair and opened her photocells wide. Tin Philosopher coughed to limber up the diaphragm of his speaker and continued:

"Ever since the first cave wife boasted to her next-den neighbor about the superior paleness and fluffiness of her tortillas, mankind has sought lighter, whiter bread. Indeed, thinkers wiser than myself have equated the whole upward course of culture with this poignant quest. Yeast was a wonderful discovery—for its primitive day. Sifting the bran and wheat germ from the flour was an even more important advance. Early bleaching and preserving chemicals played their humble parts.

"For a while, barbarous faddists—blind to the deeply spiritual nature of bread, which is recognized by all great religions—held back our march toward perfection with their hair-splitting insistence on the vitamin content of the wheat germ, but their case collapsed when tasteless colorless substitutes were triumphantly synthesized and introduced into the loaf, which for flawless purity, unequaled airiness and sheer intangible goodness was rapidly becoming mankind's supreme gustatory experience."

"I wonder what the stuff tastes like," Rose Thinker said out of a clear sky.

"I wonder what taste tastes like," Tin Philosopher echoed dreamily. Recovering himself, he continued:

"Then, early in the twenty-first century, came the epochal researches of Everett Whitehead, Puffyloaf chemist, culminating in his paper 'The Structural Bubble in Cereal Masses' and making possible the baking of airtight bread twenty times stronger (for its weight) than steel

and of a lightness that would have been incredible even to the advanced chemist-bakers of the twentieth century —a lightness so great that, besides forming the backbone of our own promotion, it has forever since been capitalized on by our conscienceless competitors of Fairy Bread with their enduring slogan: 'It Makes Ghost Toast'."

"That's a beaut, all right, that ecto-dough blurb," Rose Thinker admitted, bugging her photocells sadly. "Wait a sec. How about?—

"There'll be bread
Overhead
When you're dead—
It is said."

Phineas T. Gryce wrinkled his nostrils at the pink machine as if he smelled her insulation smoldering. He said mildly, "A somewhat unhappy jingle, Rose, referring as it does to the end of the customer as consumer. Moreover, we shouldn't overplay the figurative 'rises through the air' angle. What inspired you?"

She shrugged. "I don't know—oh, yes, I do. I was remembering one of the workers' songs we machines used to chant during the Big Strike—

"Work and pray,
Live on hay.
You'll get pie
In the sky
When you die—
It's a lie!'

"I don't know why we chanted it," she added. "We didn't want pie—or hay, for that matter. And machines don't pray, except Tibetan prayer wheels."

Phineas T. Gryce shook his head. "Labor relations are another topic we should stay far away from. However, dear Rose, I'm glad you keep trying to outjingle those dirty crooks at Fairy Bread." He scowled, turning back his attention to Tin Philosopher. "I get whopping mad,

Old Machine, whenever I hear that other slogan of theirs, the discriminatory one—'Untouched by Robot Claws.' Just because they employ a few filthy androids in their factories!"

Tin Philosopher lifted one of his own sets of bright talons. "Thanks, P.T. But to continue my historical resume, the next great advance in the baking art was the substitution of purified carbon dioxide, recovered from coal smoke, for the gas generated by yeast organisms indwelling in the dough and later killed by the heat of baking, their corpses remaining *in situ*. But even purified carbon dioxide is itself a rather repugnant gas, a product of metabolism whether fast or slow, and forever associated with those life processes which are obnoxious to the fastidious."

Here the machine shuddered with delicate clinkings. "Therefore, we of Puffyloaf are taking today what may be the ultimate step toward purity: we are aerating our loaves with the noble gas helium, an element which remains virginal in the face of all chemical temptations and whose slim molecules are eleven times lighter than obese carbon dioxide—yes, noble uncontaminable helium, which, if it be a kind of ash, is yet the ash only of radioactive burning, accomplished or initiated entirely on the Sun, a safe 93 million miles from this planet. Let's have a cheer for the helium loaf!"

Without changing expression, Phineas T. Gryce rapped the table thrice in solemn applause, while the others bowed their heads.

"Thanks, T.P.," P.T. then said. "And now for the Moment of Truth. Miss Winterly, how is the helium loaf selling?"

The business girl clapped on a pair of earphones and whispered into a lapel mike. Her gaze grew abstracted as she mentally translated flurries of brief squawks into coherent messages. Suddenly a single vertical furrow creased her matchlessly smooth brow.

"It isn't, Mr. Gryce!" she gasped in horror. "Fairy Bread is outselling Puffyloaves by an infinity factor. So far this morning, *there has not been one single delivery of Puffyloaves to any sales spot!* Complaints about non-delivery

are pouring in from both walking stores and sessile shops."

"Mr. Snedden!" Gryce barked. "What bug in the new helium process might account for this delay?"

Roger was on his feet, looking bewildered. "I can't imagine, sir, unless—just possibly—there's been some unforeseeable difficulty involving the new metal-foil wrappers."

"Metal-foil wrappers? Were *you* responsible for those?"

"Yes, sir. Last-minute recalculations showed that the extra lightness of the new loaf might be great enough to cause drift during stackage. Drafts in stores might topple sales pyramids. Metal-foil wrappers, by their added weight, took care of the difficulty."

"And you ordered them without consulting the Board?"

"Yes, sir. There was hardly time and—"

"Why, you fool! I noticed that order for metal-foil wrappers, assumed it was some sub-secretary's mistake, and canceled it last night!"

Roger Snedden turned pale. "You canceled it?" he quavered. "And told them to go back to the lighter plastic wrappers?"

"Of course! Just what is behind all this, Mr. Snedden? *What* recalculations were you trusting, when our physicists had demonstrated months ago that the helium loaf was safely stackable in light airs and gentle breezes—winds up to Beaufort's scale 8. *Why* should a change from heavier to lighter wrappers result in complete nondelivery?"

Roger Snedden's paleness became tinged with an interesting green. He cleared his throat and made strange gulping noises. Tin Philosopher's photocells focused on him calmly, Rose Thinker's with unfeigned excitement. P. T. Gryce's frown grew blacker by the moment, while Megera Winterly's Venus-mask showed an odd dawning of dismay and awe. She was getting new squawks in her earphones.

"Er . . . ah . . . er . . ." Roger said in winning tones. "Well, you see, the fact is that I . . ."

"Hold it," Meg interrupted crisply "Triple-urgent from Public Relations, Safety Division. Tulsa-Topeka aero-ex-

press makes emergency landing after being buffeted in encounter with vast flight of objects first described as brown birds, although no failures reported in airway's electronic anti-bird fences. After grounding safely near Emporia—no fatalities—pilot's windshield found thinly plastered with soft white-and-brown material. Emblems on plastic wrappers embedded in material identify it incontrovertibly as an undetermined number of Puffyloaves cruising at three thousand feet!"

Eyes and photocells turned inquisitorially upon Roger Snedden. He went from green to Puffyloaf white and blurted: "All right, I did it, but it was the only way out! Yesterday morning, due to the Ukrainian crisis, the government stopped sales and deliveries of all strategic stockpiled materials, including helium gas. Puffy's new program of advertising and promotion, based on the lighter loaf, was already rolling. There was only one thing to do, there being only one other gas comparable in lightness to helium. I diverted the necessary quantity of hydrogen gas from the Hydrogenated Oils Section of our Magna-Margarine Division and substituted it for the helium."

"You substituted . . . hydrogen . . . for the . . . helium?" Phineas T. Gryce faltered in low mechanical tones, taking four steps backward.

"Hydrogen is twice as light as helium," Tin Philosopher remarked judiciously.

"And many times cheaper—did you know that?" Roger countered feebly. "Yes, I substituted hydrogen. The metal-foil wrapping would have added just enough weight to counteract the greater buoyancy of the hydrogen loaf. But—"

"So, when this morning's loaves began to arrive on the delivery platforms of the walking mills . . ." Tin Philosopher left the remark unfinished.

"Exactly," Roger agreed dismally.

"Let me ask you, Mr. Snedden," Gryce interjected, still in low tones, "if you expected people to jump to the kitchen ceiling for their Puffybread after taking off the metal wrapper, or reach for the sky if they happened to unwrap the stuff outdoors?"

"Mr. Gryce," Roger said reproachfully, "you have often assured me that what people do with Puffybread after they buy it is no concern of ours."

"I seem to recall," Rose Thinker chirped somewhat unkindly, "that that dictum was created to answer inquiries after Roger put the famous sculptures-in-miniature artist on 3D and he testified that he always molded his first attempts from Puffybread, one jumbo loaf squeezing down to approximately the size of a peanut."

Her photocells dimmed and brightened. "Oh, boy—hydrogen! The loaf's unwrapped. After a while, in spite of the crust-seal, a little oxygen diffuses in. An explosive mixture. Housewife in curlers and kimono pops a couple slices in the toaster. Boom!"

The three human beings in the room winced.

Tin Philosopher kicked her under the table, while observing. "So you see, Roger, that the non-delivery of the hydrogen loaf carries some consolations. And I must confess that one aspect of the affair gives me great satisfaction, not as a Board Member but as a private machine. You have at last made a reality of the 'rises through the air' part of Puffybread's theme. They can't ever take that away from you. By now, half the inhabitants of the Great Plains must have observed our flying loaves rising high."

Phineas T. Gryce shot a frightened look at the west windows and found his full voice.

"Stop the mills!" he roared at Meg Winterly, who nodded and whispered urgently into her mike.

"A sensible suggestion," Tin Philosopher said. "But it comes a trifle late in the day. If the mills are still walking and grinding, approximately seven billion Puffyloaves are at this moment cruising eastward over Middle America. Remember that a six-month supply for deep-freeze is involved and that the current consumption of bread, due to its matchless airiness, is eight and one-half loaves per person per day."

Phineas T. Gryce carefully inserted both hands into his scanty hair, feeling for a good grip. He leaned menacingly

toward Roger who, chin resting on the table, regarded him apathetically.

"Hold it!" Meg called sharply. "Flock of multiple-urgents coming in. News Liaison: information bureaus swamped with flying-bread inquiries. Aero-expresslines: Clear our airways or face law suit. U. S. Army: Why do loaves flame when hit by incendiary bullets? U. S. Customs: If bread intended for export, get export license or face prosecution. Russian Consulate in Chicago: Advise on destination of bread-lift. And some Kansas church is accusing us of a hoax inciting to blasphemy, of faking miracles—I don't know *why*."

The business girl tore off her headphones. "Roger Snedden," she cried with a hysteria that would have dumfounded her underlings, "you've brought the name of Puffyloaf in front of the whole world, all right! Now do something about the situation!"

Roger nodded obediently. But his pallor increased a shade, the pupils of his eyes disappeared under the upper lids, and his head burrowed beneath his forearms.

"Oh, boy," Rose Thinker called gaily to Tin Philosopher, "this looks like the start of a real crisis session! Did you remember to bring spare batteries?"

Meanwhile, the monstrous flight of Puffyloaves, filling midwestern skies as no small fliers had since the days of the passenger pigeon, soared steadily onward.

Private fliers approached the brown and glistening bread-front in curiosity and dipped back in awe. Aero-expresslines organized sightseeing flights along the flanks. Planes of the government forestry and agricultural services and 'copters bearing the Puffyloaf emblem hovered on the fringes, watching developments and waiting for orders. A squadron of supersonic fighters hung menacingly above.

The behavior of birds varied considerably. Most fled or gave the loaves a wide berth, but some bolder species, discovering the minimal nutritive nature of the translucent brown objects, attacked them furiously with beaks and claws. Hydrogen diffusing slowly through the crusts had

now distended most of the sealed plastic wrappers into little balloons, which ruptured, when pierced, with disconcerting *pops*.

Below, neck-craning citizens crowded streets and back yards, cranks and cultists had a field day, while local and national governments raged indiscriminately at Puffyloaf and at each other.

Rumors that a fusion weapon would be exploded in the midst of the flying bread drew angry protests from conservationists and a flood of telefax pamphlets titled "H-Loaf or H-bomb?"

Stockholm sent a mystifying note of praise to the United Nations Food Organization.

Delhi issued nervous denials of a millet blight that no one had heard of until that moment and reaffirmed India's ability to feed her population with no outside help except the usual.

Radio Moscow asserted that the Kremlin would brook no interference in its treatment of the Ukrainians, jokingly referred to the flying bread as a farce perpetrated by mad internationalists inhabiting Cloud Cuckoo Land, added contradictory references to airborne bread booby-trapped by Capitalist gangsters, and then fell moodily silent on the whole topic.

Radio Venus reported to its winged audience that Earth's inhabitants were establishing food depots in the upper air, preparatory to taking up permanent aerial residence "such as we have always enjoyed on Venus."

NewNew York made feverish preparations for the passage of the flying bread. Tickets for sightseeing space in skyscrapers were sold at high prices; cold meats and potted spreads were hawked to viewers with the assurance that they would be able to snag the bread out of the air and enjoy a historic sandwich.

Phineas T. Gryce, escaping from his own managerial suite, raged about the city, demanding general cooperation in the stretching of great nets between the skyscrapers to trap the errant loaves. He was captured by Tin Philosopher, escaped again, and was found posted with oxygen

mask and submachinegun on the topmost spire of Puffy-loaf Tower, apparently determined to shoot down the loaves as they appeared and before they involved his company in more trouble with Customs and the State Department.

Recaptured by Tin Philosopher, who suffered only minor bullet holes, he was given a series of mild electro-shocks and returned to the conference table, calm and clear-headed as ever.

But the bread flight, swinging away from a hurricane moving up the Atlantic coast, crossed a clouded-in Boston by night and disappeared into a high Atlantic overcast, also thereby evading a local storm generated by the Weather Department in a last-minute effort to bring down or at least disperse the H-loaves.

Warnings and counterwarnings by Communist and Capitalist governments seriously interfered with military trailing of the flight during this period and it was actually lost touch with for several days.

At scattered points, seagulls were observed fighting over individual loaves floating down from the gray roof —that was all.

A mood of spirituality strongly tinged with humor seized the people of the world. Ministers sermonized about the bread, variously interpreting it as a call to charity, a warning against gluttony, a parable of the evanescence of all earthly things, and a divine joke. Husbands and wives, facing each other across their walls of breakfast toast, burst into laughter. The mere sight of a loaf of bread anywhere was enough to evoke guffaws. An obscure sect, having as part of its creed the injunction "Don't take yourself so damn seriously," won new adherents.

The bread flight, rising above an Atlantic storm widely reported to have destroyed it, passed unobserved across a foggy England and rose out of the overcast only over Mittel-europa. The loaves had at last reached their maximum altitude.

The Sun's rays beat through the rarified air on the distended plastic wrappers, increasing still further the pressure of the confined hydrogen. They burst by the millions

and ten of millions. A high-flying Bulgarian evangelist, who had happened to mistake the up-lever for the east-lever in the cockpit of his flier and who was the sole witness of the event, afterward described it as "the foaming of a sea of diamonds, the crackle of God's knuckles."

By the millions and tens of millions, the loaves coasted down into the starving Ukraine. Shaken by a week of humor that threatened to invade even its own grim precincts, the Kremlin made a sudden about-face. A new policy was instituted of communal ownership of the produce of communal farms, and teams of hunger-fighters and caravans of trucks loaded with pumpernickel were dispatched into the Ukraine.

World distribution was given to a series of photographs showing peasants queueing up to trade scavenged Puffy-loaves for traditional black bread, recently aerated itself but still extra solid by comparison, the rate of exchange demanded by the Moscow teams being twenty Puffyloaves to one of pumpernickel.

Another series of photographs, picturing chubby workers' children being blown to bits by booby-trapped bread, was quietly destroyed.

Congratulatory notes were exchanged by various national governments and world organizations, including the Brotherhood of Free Business Machines. The great bread flight was over, though for several weeks afterward scattered falls of loaves occurred, giving rise to a new folklore of manna among lonely Arabian tribesmen, and in one well-authenticated instance in Tibet, sustaining life in a party of mountaineers cut off by a snow slide.

Back in NewNew York, the managerial board of Puffy Products slumped in utter collapse around the conference table, the long crisis session at last ended. Empty coffee cartons were scattered around the chairs of the three humans, dead batteries around those of the two machines. For a while, there was no movement whatsoever. Then Roger Snedden reached out wearily for the earphones where Megera Winterly had hurled them down, adjusted

them to his head, pushed a button and listened apathetically.

After a bit, his gaze brightened. He pushed more buttons and listened more eagerly. Soon he was sitting tensely upright on his stool, eyes bright and lower face all a-smile, muttering terse comments and questions into the lapel mike torn from Meg's fair neck.

The others, reviving, watched him, at first dully, then with quickening interest, especially when he jerked off the earphones with a happy shout and sprang to his feet.

"Listen to this!" he cried in a ringing voice. "As a result of the worldwide publicity, Puffyloaves are outselling Fairy Bread three to one—and that's just the old carbon-dioxide stock from our freezers! It's almost exhausted, but the government, now that the Ukrainian crisis is over, has taken the ban off helium and will also sell us stockpiled wheat if we need it. We can have our walking mills burrowing into the wheat caves in a matter of hours!

"But that isn't all! The far greater demand everywhere is for Puffyloaves that will actually float. Public Relations, Child Liaison Division, reports that the kiddies are making their mothers' lives miserable about it. If only we can figure out some way to make hydrogen non-explosive or the helium loaf float just a little—"

"I'm sure we can take care of that quite handily," Tin Philosopher interrupted briskly. "Puffyloaf has kept it a corporation secret—even you've never been told about it—but just before he went crazy, Everett Whitehead discovered a way to make bread using only half as much flour as we do in the present loaf. Using this secret technique, which we've been saving for just such an emergency, it will be possible to bake a helium loaf as buoyant in every respect as the hydrogen loaf."

"Good!" Roger cried. "We'll tether 'em on strings and sell 'em like balloons. No mother-child shopping team will leave the store without a cluster. Buying bread balloons will be the big event of the day for kiddies. It'll make the carry-home shopping load lighter too! I'll issue orders at once—"

He broke off, looking at Phineas T. Gryce, said with quiet assurance, "Excuse me, sir, if I seem to be taking too much upon myself."

"Not at all, son; go straight ahead," the great manager said approvingly. "You're"—he laughed in anticipation of getting off a memorable remark—"rising to the challenging situation like a genuine Puffyloaf."

Megera Winterly looked from the older man to the younger. Then in a single leap she was upon Roger, her arms wrapped tightly around him.

"My sweet little ever-victorious, self-propelled monkey wrench!" she crooned in his ear. Roger looked fatuously over her soft shoulder at Tin Philosopher who, as if moved by some similar feeling, reached over and touched claws with Rose Thinker.

This, however, was what he telegraphed silently to his fellow machine across the circuit so completed:

"Good-o, Rosie! That makes another victory for robot-engineered world unity, though you almost gave us away at the start with that 'bread overhead' jingle. We've struck another blow against the next world war, in which—as we know only too well—we machines would suffer the most. Now if we can only arrange, say, a fur-famine in Alaska and a migration of long-haired Siberian lemmings across Behring Straits . . . we'd have to swing the Japanese Current up there so it'd be warm enough for the little fellows . . . Anyhow, Rosie, with a spot of help from the Brotherhood, those humans will paint themselves into the peace corner yet."

Meanwhile, he and Rose Thinker quietly watched the Blonde Icicle melt.

THE LAST LETTER

ON Tenthmonth 1, 2457 A.D., at exactly 9 A.M. Planetary Federation Time—but with a permissible error of a millionth of a second either way—in the fifth sublevel of New-New York Robot Postal Station 68, Black Sorter gulped down ten thousand pieces of first-class mail.

This breakfast tidbit did not agree with the mail-sorting machine. It was as if a robust dog had been fed a large chunk of good red meat with a strychnine pill in it. Black Sorter's innards went *whirr-klunk*, a blue electric glow enveloped him, and he began to shake as if he might break loose from the concrete.

He desperately spat back over his shoulder a single envelope, gave a great *huff* and blew out toward the sorting tubes a medium-size snowstorm consisting of the other nine thousand, nine hundred and ninety-nine pieces of first-class mail chewed to confeti. Then, still convulsed, he snapped up a fresh ten thousand and proceeded to chomp and grind on them. Black Sorter was rugged.

The rejected envelope was tongued up by Red Subsorter, who growled deep in his throat, said a very bad word, and passed it to Yellow Rerouter, who passed it to Green Rerouter, who passed it to Brown Study, who passed it to Pink Wastebasket.

Unlike Black Sorter, Pink Wastebasket was very delicate, though highly intuitive—the machine equivalent of a White Russian countess. She was designed to scan in 3,137 codes, route special-delivery spacemail to interplanetary liners by messenger rocket, and distinguished 9s from upside-down 6s.

Pink Wastebasket haughtily inhaled the offending envelope and almost instantly turned a bright crimson and

began to tremble. After a few minutes, small atomic flames started to flicker from her mid-section.

White Nursemaid Seven and Greasy Joe both received Pink Wastebasket's distress signal and got there as fast as their wheels would roll them, but the high-born machine's malady was beyond their simple skills of oilcan and electroshock.

They summoned other machine-tending-and-repairing machines, ones far more expert than themselves, but all were baffled. It was clear that Pink Wastebasket, who continued to tremble and flicker uncontrollably, was suffering from the equivalent of a major psychosis with severe psychosomatic symptoms. She spat a stream of filthy ions at Gray Psychiatrist, not recognizing her old friend.

Meanwhile, the paper blizzard from Black Sorter was piling up in great drifts between the dark pillars of the sublevel, and flurries had reached Pink Wastebasket's aristocratic area. An expedition of sturdy machines, headed by two hastily summoned snowplows, was dispatched to immobilize Black Sorter at all costs.

Pink Wastebasket, quivering like a demented hula dancer, was clearly approaching a crisis. Finally Gray Psychiatrist—after consulting with Green Surgeon, and even then with an irritated reluctance, as if he were calling in a witch-doctor—summoned a human being.

The human being walked respectfully around Pink Wastebasket several times and then gave her a nervous little poke with a rubber-handled probe.

Pink Wastebasket gently regurgitated her last snack, turned dead white, gave a last flicker and shake, and expired. Black Coroner recorded the immediate cause of death as tinkering by a human being.

The human being, a bald and scrawny one named Potshelter, picked up the envelope responsible for all the trouble, stared at it incredulously, opened it with trembling fingers, scanned the contents briefly, gave a great shriek and ran off at top speed, forgeting to hop on his perambulator, which followed him making anxious clucking noises.

The nearest human representative of the Solar Bureau of Investigation, a rather wooden-looking man named Krumbine, also bald, recognized Potshelter as soon as the latter burst gasping into his office, squeezing through the door while it was still dilating. The human beings whose work took them among the Top Brass, as the upper-echelon machines were sometimes referred to, formed a kind of human elite, just one big nervous family.

"Sit down, Potshelter," the SBI Man said. "Hold still a second so the chair can grab you. Hitch onto the hookah and choose a tranquilizer from the tray at your elbow. Whatever deviation you've uncovered can't be that much of a danger to the planets. I imagine that when you leave this office, the Solar Battle Fleet will still be orbiting peacefully around Luna."

"I seriously doubt that."

Potshelter gulped a large lavender pill and took a deep breath. "Krumbine, a letter turned up in the first-class mail this morning."

"Great Scott!"

"It is a letter from one person to another person."

"Good Lord!"

"The flow of advertising has been seriously interfered with. At a modest estimate, three hundred million pieces of expensive first-class advertising have already been chewed to rags and I'm not sure the Steel Helms—God bless 'em!—have the trouble in hand yet."

"Judas Priest!"

"Naturally the poor machines weren't able to cope with the letter. It was utterly outside their experience, beyond the furthest reach of their programming. It threw them into a terrible spasm. Pink Wastebasket is dead and at this very instant, if we're lucky, three police machines of the toughest blued steel are holding down Black Sorter and putting a muzzle on him."

"Great Scott! It's incredible, Potshelter. And Pink Wastebasket dead? Take another tranquilizer, Potshelter, and hand over the tray."

Krumbine received it with trembling fingers, started to

pick up a big pink pill but drew back his hand from it in sudden revulsion at its color and swallowed two blue oval ones instead. The man was obviously fighting to control himself.

He said unsteadily, "I almost never take doubles, but this news you bring—Good Lord! I seem to recall a case where someone tried to send a sound-tape through the mails, but that was before my time. Incidentally, is there any possibility that this is a letter sent by one *group* of persons to another group? A hive or a therapy group or a social club? That would be bad enough, of course, but—"

"No, just one single person sending to another." Potshelter's expression set in grimly solicitous lines. "I can see you don't quite understand, Krumbine. This is not a sound-tape, but a letter written in letters. You know, letters, characters—like books."

"Don't mention books in this office!" Krumbine drew himself up angrily and then slumped back. "Excuse me, Potshelter, but I find this very difficult to face squarely. Do I understand you to say that one person has tried to use the mails to send a printed sheet of some sort to another?"

"Worse than that. A written letter."

"Written? I don't recognize the word."

"It's a way of making characters, of forming visual equivalents of sound, without using electricity. The writer, as he's called, employs a black liquid and a pointed stick called a pen. I know about this because one hobby of mine is ancient means of communication."

Krumbine frowned and shook his head. "Communication is a dangerous business, Potshelter, especially at the personal level. With you and me, it's all right, because we know what we're doing."

He picked up a third blue tranquilizer. "But with most of the hive-folk, person-to-person communication is only a morbid form of advertising, a dangerous travesty of normal newscasting—catharsis without the analyst, recitation without the teacher—a perversion of promotion employed in betraying and subverting."

The frown deepened as he put the blue pill in his mouth and chewed it. "But about this pen—do you mean the fellow glues the pointed stick to his tongue and then speaks, and the black liquid traces the vibrations on the paper? A primitive non-electrical oscilloscope? Sloppy but conceivable, and producing a record of sorts of the spoken word."

"No, no, Krumbine." Potshelter nervously popped a square orange tablet into his mouth. "It's a hand-written letter."

Krumbine watched him. "I never mix tranquilizers," he boasted absently. "Hand-written, eh? You mean that the message was imprinted on a hand? And the skin or the entire hand afterward detached and sent through the mails in the fashion of a Martian reproach? A grisly find indeed, Potshelter."

"You still don't quite grasp it, Krumbine. The fingers of the hand move the stick that applies the ink, producing a crude imitation of the printed word."

"Diabolical!" Krumbine smashed his fist down on the desk so that the four phones and two-score microphones rattled. "I tell you, Potshelter, the SBI is ready to cope with the subtlest modern deceptions, but when fiends search out and revive tricks from the pre-Atomic Cave Era, it's almost too much. But, Great Scott, I dally while the planets are in danger. What's the sender's code on this hellish letter?"

"No code," Potshelter said darkly, proferring the envelope. "The return address is—hand-written."

Krumbine blanched as his eyes slowly traced the uneven lines in the upper left-hand corner:

from RICHARD ROWE
215 West 10th St. (horizontal)
2837 Rocket Court (vertical)
Hive 37, NewNew York 319, N. Y.
Columbia, Terra

"Ugh!" Krumbine said, shivering. "Those crawling characters, those letters, as you call them, those *things*

barely enough like print to be readable—they seem to be on the verge of awakening all sorts of horrid racial memories. I find myself thinking of fur-clad witch-doctors dipping long pointed sticks in bubbling black cauldrons. No wonder Pink Wastebasket couldn't take it, brave girl."

Firming himself behind his desk, he pushed a number of buttons and spoke long numbers and meaningful alphabetical syllables into several microphones. Banks of colored lights around the desk began to blink like a theatre marquee sending Morse Code, while phosphorescent arrows crawled purposefully across maps and space-charts and through three-dimensional street diagrams.

"There!" he said at last. "The sender of the letter is being apprehended and will be brought directly here. We'll see what sort of man this Richard Rowe is—if we can assume he's human. Seven precautionary cordons are being drawn around his population station: three composed of machines, two of SBI agents, and two consisting of human and mechanical medical-combat teams. Same goes for the intended recipient of the letter. Meanwhile, a destroyer squadron of the Solar Fleet has been detached to orbit over NewNew York."

"In case it becomes necessary to Z-Bomb?" Potshelter asked grimly.

Krumbine nodded. "With all those villains lurking just outside the Solar System in their invisible black ships, with planeticide in their hearts, we can't be too careful. One word transmitted from one spy to another and anything may happen. And we must bomb before they do, so as to contain our losses. Better one city destroyed than a traitor on the loose who may destroy many cities. One hundred years ago, three person-to-person postcards went through the mails—just three postcards, Potshelter!—and *pft* went Schenectady, Hoboken, Cicero, and Walla Walla. Here, as long as you're mixing them, try one of these oval blues—I find them best for steady swallowing."

Bells jangled. Krumbine grabbed up two phones, holding one to each ear. Potshelter automatically picked up a third. The ringing continued. Krumbine started to wedge

one of his phones under his chin, nodded sharply at Potshelter and then toward a cluster of microphones at the end of the table. Potshelter picked up a fourth phone from behind them. The ringing stopped.

The two men listened, looking doped, Krumbine with an eye fixed on the sweep second hand of the large wall clock. When it had made one revolution, he cradled his phones. Potshelter followed suit.

"I do like the simplicity of the new on-the-hour Puffy-loaf phono-commercial," the latter remarked thoughtfully. "The Bread That's Lighter Than Air. Nice."

Krumbine nodded. "I hear they've had to add mass to the leadfoil wrapping to keep the loaves from floating off the shelves. Fact."

He cleared his throat. "Too bad we can't listen to more phono-commercials, but even when there isn't a crisis on the agenda, I find I have to budget my listening time. One minute per hour strikes a reasonable balance between duty and self-indulgence."

The nearest wall began to sing:

> Mister J. Augustus Krumbine,
> We all think you're fine, fine, fine, fine.
> Now out of the skyey blue
> Come some telegrams for you.

The wall opened to a small heart shape toward the center and a sheaf of pale yellow envelopes arced out and plopped on the middle of the desk. Krumbine started to leaf through them, scanning the little transparent windows.

"Hm, Electronic Soap . . . Better Homes and Landing Platforms. . . Psycho-Blinkers . . . Your Girl Next Door . . . Poppy-Woppies . . . Poppy-Woopsies . . ."

He started to open an envelope, then, after a quick look around and an apologetic smile at Potshelter, dumped them all on the disposal hopper, which gargled briefly.

"After all, there *is* a crisis this morning," he said in a defensive voice.

Potshelter nodded absently. "I can remember back before personalized delivery and rhyming robots," he observed. "But how I'd miss them now—so much more distingué than the hives with their non-personalized radio, TV and stereo advertising. For that matter, I believe there are some backward areas on Terra where the great advertising potential of telephones and telegrams hasn't been fully realized and they are still used in part for personal communication. Now me, I've never in my life sent or received a message except on my walky-talky." He patted his breast pocket.

Krumbine nodded, but he was a trifle shocked and inclined to revise his estimate of Potshelter's social status. Krumbine conducted his own social correspondence solely by telepathy. He shared with three other SBI officials a private telepath—a charming albino girl named Agnes.

"Yes, and it's a very handsome walky-talky," he assured Potshelter a little falsely. "Suits you. I like the upswept antenna." He drummed on the desk and swallowed another blue tranquilizer. "Dammit, what's happened to those machines? They ought to have the two spies here by now. Did you notice that the second—the intended recipient of the letter, I mean—seems to be female? Another good Terran name, too, Jane Dough. Hive in Upper Manhattan." He began to tap the envelope sharply against the desk. "Dammit, where *are* they?"

"Excuse me," Potshelter said hesitantly, "but I'm wondering why you haven't read the message inside the envelope."

Krumbine looked at him blankly. "Great Scott, I assumed that at least *it* was in some secret code, of course. Normally I'd have asked you to have Pink Wastebasket try her skill on it, but . . ." His eyes widened and his voice sank. "You don't mean to tell me that it's—"

Potshelter nodded grimly. "Hand-written, too. Yes."

Krumbine winced. "I keep trying to forget that aspect of the case." He dug out the message with shaking fingers, fumbled it open and read:

Dear Jane,

It must surprise you that I know your name, for our hives are widely separated. Do you recall day before yesterday when your guided tour of Grand Central Spaceport got stalled because the guide blew a fuse? I was the young man with hair in the tour behind yours. You were a little frightened and a groupmistress was reassuring you. The machine spoke your name.

Since then I have been unable to forget you. When I go to sleep, I dream of your face looking up sadly at the mistress's kindly photocells. I don't know how to get in touch with you, but my grandfather has told me stories his grandfather told him about young men writing what he calls love-letters to young ladies. So I am writing you a love-letter.

I work in a first-class advertising house and I will slip this love-letter into an outgoing ten-thousand-pack and hope.

Do not be frightened of me, Jane. I am no caveman except for my hair. I am not insane. I am emotionally disturbed, but in a way that no machine has ever described to me. I want only your happiness.

Sincerely,
Richard Rowe

Krumbine slumped back in his chair, which braced itself manfully against him, and looked long and thoughtfully at Potshelter. "Well, if that's a code, it's certainly a fiendishly subtle one. You'd think he was talking to his Girl Next Door."

Potshelter nodded wonderingly. "I only read as far as where they were planning to blow up Grand Central Spaceport and all the guides in it."

"Judas Priest, I think I have it!" Krumbine shot up. "It's a pilot advertisement—Boy Next Door or—that kind of thing—printed to look like hand-writtening, which would make all the difference. And the pilot copy got mailed by accident—which would mean there is no real Richard Rowe."

At that instant, the door dilated and two blue detective

engines hustled a struggling young man into the office. He was slim, rather handsome, had a bushy head of hair that had somehow survived evolution and radioactive fallout, and across the chest and back of his paper singlet was neatly stamped: "RICHARD ROWE."

When he saw the two men, he stopped struggling and straightened up. "Excuse me, gentlemen," he said, "but these police machines must have made a mistake. I've committed no crime."

Then his gaze fell on the hand-addressed envelope on Krumbine's desk and he turned pale.

Krumbine laughed harshly. "No crime! No, not at all. Merely using the mails to communicate. Ha!"

The young man shrank back. "I'm sorry, sir."

"Sorry, he says! Do you realize that your insane prank has resulted in the destruction of perhaps a half-billion pieces of first-class advertising?—in the strangulation of a postal station and the paralysis of Lower Manhattan?—in the mobilization of SBI reserves, the de-mothballing of two divisions of G. I. machines and the redeployment of the Solar Battle Fleeet? Good Lord, boy, why did you do it?"

Richard Rowe continued to shrink but he squared his shoulders. "I'm sorry, sir, but I just had to. I just had to get in touch with Jane Dough."

"A girl from another hive? A girl you'd merely gazed at because a guide happened to blow a fuse?" Krumbine stood up, shaking an angry finger. "Great Scott, boy, where was Your Girl Next Door?"

Richard Rowe stared bravely at the finger, which made him look a trifle cross-eyed. "She died, sir, both of them."

"But there should be at least six."

"I know, sir, but of the other four, two have been shipped to the Adirondacks on vacation and two recently got married and haven't been replaced."

Potshelter, a faraway look in his eyes, said softly, "I think I'm beginning to understand—"

But Krumbine thundered on at Richard Rowe with,

"Good Lord, I can see you've had your troubles, boy. It isn't often we have these shortages of Girls Next Door, so that temporarily a boy can't marry the Girl Next Door, as he always should. But, Judas Priest, why didn't you take your troubles to your psychiatrist, your groupmaster, your socializer, your Queen Mother?"

"My psychiatrist is being overhauled, sir, and his replacement short-circuits every time he hears the word 'trouble.' My groupmaster and socializer are on vacation duty in the Adirondacks. My Queen Mother is busy replacing Girls Next Door."

"Yes, it all fits," Potshelter proclaimed excitedly. "Don't you see, Krumbine? Except for a set of mischances that would only occur once in a billion billion times, the letter would never have been conceived or sent."

"You may have something there," Krumbine concurred. "But in any case, boy, why did you—er—written this letter to this particular girl? What is there about Jane Dough that made you do it?"

"Well, you see, sir, she's—"

Just then, the door re-dilated and a blue matron machine conducted a young woman into the office. She was slim and she had a head of hair that would have graced a museum beauty, while across the back and—well, "chest" is an inadequate word—of her paper chemise, "JANE DOUGH" was silk-screened in the palest pink.

Krumbine did not repeat his last question. He had to admit to himself that it had been answered fully. Potshelter whistled respectfully. The blue detective engines gave hard-boiled grunts. Even the blue matron machine seemed awed by the girl's beauty.

But she had eyes only for Richard Rowe. "My Grand Central man," she breathed in amazement. "The man I've dreamed of ever since. My man with hair." She noticed the way he was looking at her and she breathed harder. "Oh, darling, what have you done?"

"I tried to send you a letter."

"A letter? For me? Oh, darling!"

Krumbine cleared his throat. "Potshelter, I'm going to wind this up fast. Miss Dough, could you transfer to this young man's hive?"

"Oh, yes, sir! Mine has an over-plus of Girls Next Door."

"Good. Mr. Rowe, there's a sky-pilot two levels up—look for the usual white collar just below the photocells. Marry this girl and take her home to your hive. If your Queen Mother objects refer her to—er—Potshelter here."

He cut short the young people's thanks. "Just one thing," he said, wagging a finger at Rowe. "Don't written any more letters."

"Why ever would I?" Richard answered. "Already my action is beginning to seem like a mad dream."

"Not to me, dear," Jane corrected him. "Oh, sir, could I have the letter he sent me? Not to do anything with. Not to show anyone. Just to keep."

"Well, I don't know—" Krumbine began.

"Oh, *please,* sir!"

"Well, I don't know why not, I was going to say. Here you are, miss. Just see that this husband of yours never writtens another."

He turned back as the contracting door shut the young couple from view.

"You were right, Potshelter," he said briskly. "It was one of those combinations of mischances that come up only once in a billion billion times. But we're going to have to issue recommendations for new procedures and safeguards that will reduce the possibilities to one in a trillion trillion. It will undoubtedly up the Terran income tax a healthy percentage, but we can't have something like this happening again. Every boy must marry the Girl Next Door! And the first-class mails must not be interfered with! The advertising must go through!"

"I'd almost like to see it happen again," Potshelter murmured dreamily, "if there were another Jane Dough in it."

Outside, Richard and Jane had halted to allow a small cortege of machines to pass. First came a squad of police machines with Black Sorter in their midst, unmuzzled and docile enough, though still gnashing his teeth softly. Then

—stretched out horizontally and borne on the shoulders of Gray Psychiatrist, Black Coroner, White Nursemaid Seven and Greasy Joe—there passed the slim form of Pink Wastebasket, snow-white in death. The machines were keening softly, mournfully.

Round about the black pillars, little mecho-mops were scurrying like mice, cleaning up the last of the first-class-mail bits of confetti.

Richard winced at this evidence of his aberration, but Jane squeezed his hand comfortingly, which produced in him a truly amazing sensation that changed his whole appearance.

"I know how you feel, darling," she told him. "But don't worry about it. Just think, dear, I'll always be able to tell your friends' wives something no other woman in the world can boast of: that my husband once wrote me a letter!"

RUMP-TITTY-TITTY-TUM-TAH-TEE

ONCE upon a time, when just for an instant all the molecules in the world and in the collective unconscious mind got very slippery, so that just for an instant something could pop through from the past or the future or other places, six very important intellectual people were gathered together in the studio of Simon Grue, the accidental painter.

There was Tally B. Washington, the jazz drummer. He was beating softly on a gray hollow African log and thinking of a composition he would entitle "Duet for Water Hammer and Whistling Faucet."

There were Lafcadio Smits, the interior decorator, and Lester Phlegius, the industrial designer. They were talking very intellectually together, but underneath they were wishing very hard that they had, respectively, a really catchy design for modernistic wallpaper and a really new motif for industrial advertising.

There were Gorius James McIntosh, the clinical psychologist, and Norman Saylor, the cultural anthropologist. Gorius James McIntosh was drinking whisky and wishing there were a psychological test that would open up patients a lot wider than the Rorschach or the TAT, while Norman Saylor was smoking a pipe but not thinking or drinking anything especially.

It was a very long, very wide, very tall studio. It had to be, so there would be room on the floor to spread flat one of Simon Grue's canvases, which were always big enough to dominate any exhibition with yards to spare, and room under the ceiling for a very tall, very strong scaffold.

The present canvas hadn't a bit of paint on it, not a spot or a smudge or a smear, except for the bone-white ground. On top of the scaffold were Simon Grue and twenty-seven big pots of paint and nine clean brushes, each eight inches wide. Simon Grue was about to have a new accident—a semi-controlled accident, if you please. Any minute now he'd plunge a brush in one of the cans of paint and raise it over his right shoulder and bring it forward and down with a great loose-wristed snap, as if he were cracking a bullwhip, and a great fissioning gob of paint would go *splaaAAT* on the canvas in a random, chance, arbitrary, spontaneous and therefore quintuply accidental pattern which would constitute the core of the composition and determine the form and rhythm for many, many subsequent splatters and maybe even a few contact brush strokes and impulsive smearings.

As the rhythm of Simon Grue's bouncy footsteps quickened, Norman Saylor glanced up, though not apprehensively. True, Simon had been known to splatter his friends as well as his canvases, but in anticipation of this Norman was wearing a faded shirt, old sneakers and the frayed tweed suit he'd sported as assistant instructor, while his fishing hat was within easy reach. He and his armchair were crowded close to a wall, as were the other four intellectuals. This canvas was an especially large one, even for Simon.

As for Simon, pacing back and forth atop his scaffold, he was experiencing the glorious intoxication and expansion of vision known only to an accidental painter in the great tradition of Wassily Kandinsky, Robert Motherwell and Jackson Pollock, when he is springily based a good twenty feet above a spotless, perfectly prepared canvas. At moments like this Simon was especially grateful for these weekly gatherings. Having his five especial friends on hand helped create the right intellectual milieu. He listened happily to the hollow rhythmic thrum of Tally's drumming, the multisyllabic rippling of Lester's and Lafcadio's conversation, the gurgle of Gorius' whisky bottle, and happily watched the mystic curls of Norman's pipe-

smoke. His entire being, emotions as well as mind, was a blank tablet, ready for the kiss of the universe.

Meanwhile the instant was coming closer and closer when all the molecules in the world and in the collective unconscious mind would get very slippery.

Tally B. Washington, beating on his African log, had a feeling of oppression and anticipation, almost (but not quite) a feeling of apprehension. One of Tally's ancestors, seven generations back, had been a Dahomey witch doctor, which is the African equivalent of an intellectual with artistic and psychiatric leanings. According to a very private family tradition, half joking, half serious, this five-greats-grandfather of Tally had discovered a Jumbo Magic which could "lay holt" of the whole world and bring it under its spell, but he had perished before he could try the magic or transmit it to his sons. Tally himself was altogether skeptical about the Jumbo Magic, but he couldn't help wondering about it wistfully from time to time, especially when he was beating on his African log and hunting for a new rhythm. The wistful feeling came to him right now, building on the feeling of oppression and anticipation, and his mind became a tablet blank as Simon's.

The slippery instant arrived.

Simon seized a brush and plunged it deep in the pot of black paint. Usually he used black for a final splatter if he used it at all, but this time he had the impulse to reverse himself.

Of a sudden Tally's wrists lifted high, hands dangling loosely, almost like a marionette's. There was a dramatic pause. Then his hands came down and beat out a phrase on the log, loudly and with great authority.

*Rump-titty-titty-tum-*TAH*-tee!*

Simon's wrist snapped and the middle air was full of free-falling paint which hit the canvas in a fast series of *splaaAAT's* which was an exact copy of Tally's phrase.

*Rump-titty-titty-tum-*TAH*-tee!*

Intrigued by the identity of the two sounds, and with their back hairs lifting a little for the same reason, the five intellectuals around the wall rose and stared, while Simon

looked down from his scaffold like God after the first stroke of creation.

The big black splatter on the bone-white ground was itself an exact copy of Tally's phrase, sound made sight, music transposed into visual pattern. First there was a big roundish blot—that was the *rump*. Then two rather delicate, many-tongued splatters—those were the *titties*. Next a small *rump*, which was the *tum*. Following that a big blot like a bent spearhead, not so big as the *rump* but even more emphatic—the TAH. Last of all an indescribably curled and broken little splatter which somehow seemed exactly right for the *tee*.

The whole big splatter was as like the drummed phrase as an identical twin reared in a different environment and as fascinating as a primeval symbol found next to bison paintings in a Cro-Magnon cave. The six intellectuals could hardly stop looking at it and when they did, it was to do things in connection with it, while their minds were happily a-twitter with all sorts of exciting new projects.

There was no thought of Simon doing any more splattering on the new painting until this first amazing accidental achievement had been digested and pondered.

Simon's wide-angle camera was brought into play on the scaffold and negatives were immediately developed and prints made in the darkroom adjoining the studio. Each of Simon's friends carried at least one print when he left. They smiled at each other like men who share a mysterious but powerful secret. More than one of them drew his print from under his coat on the way home and hungrily studied it.

At the gathering next week there was much to tell. Tally had introduced the phrase at a private jam session and on his live jazz broadcast. The jam session had improvised on and developed the phrase for two solid hours and the musicians had squeaked with delight when Tally finally showed them the photograph of what they had been playing, while the response from the broadcast had won Tally a new sponsor with a fat pocketbook.

Gorius McIntosh had got phenomenal results from using the splatter as a Rorschach inkblot. His star patient had

seen her imagined incestuous baby in it and spilled more in one session than in the previous hundred and forty. Stubborn blocks in two other analyses had been gloriously broken, while three catatonics at the state mental hospital had got up and danced.

Lester Phlegius rather hesitantly described how he was using "something like the splatter, really not too similar" (he said) as an attention-getter in a forthcoming series of Industrial-Design-for-Living advertisements.

Lafcadio Smits, who had an even longer and more flagrant history of stealing designs from Simon, brazenly announced that he had reproduced the splatter as a silk-screen pattern on linen. The pattern was already selling like hotcakes at five arty gift shops, while at this very moment three girls were sweating in Lafcadio's loft turning out more. He braced himself for a blast from Simon, mentally rehearsing the attractive deal he was prepared to offer, one depending on percentages of percentages, but the accidental painter was strangely abstracted. He seemed to have something weighing on his mind.

The new painting hadn't progressed any further than the first splatter.

Norman Saylor quizzed him about it semi-privately.

"I've developed a sort of artist's block," Simon confessed to him with relief. "Whenever I pick up a brush I get afraid of spoiling that first tremendous effect and I don't go on." He paused. "Another thing—I put down papers and tried some small test-splatters. They all looked almost exactly like the big one. Seems my wrist won't give out with anything else." He laughed nervously. "How are you cashing in on the thing, Norm?"

The anthropologist shook his head. "Just studying it, trying to place it in the continuum of primitive signs and universal dream symbols. It goes very deep. But about this block and this . . . er . . . fancied limitation of yours —I'd just climb up there tomorrow morning and splatter away. The big one's been photographed, you can't lose that."

Simon nodded doubtfully and then looked down at his

wrist and quickly grabbed it with his other hand, to still it. It had been twitching in a familiar rhythm.

If the tone of the gathering after the first week was enthusiastic, that after the second was euphoric. Tally's new drummed theme had given rise to a musical fad christened Drum 'n' Drag which promised to rival Rock 'n' Roll, while the drummer himself was in two days to appear as a guest artist on a network TV program. The only worry was that no new themes had appeared. All the Drum 'n' Drag pieces were based on duplications or at most developments of the original drummed phrase. Tally also mentioned with an odd reluctance that a few rabid cats had taken to greeting each other with a four-handed patty-cake that beat out *rump-titty-titty-tum-*TAH*-tee.*

Gorius McIntosh was causing a stir in psychiatric circles with his amazing successes in opening up recalcitrant cases, many of them hitherto thought fit for nothing but eventual lobotomy. Colleagues with M.D.s quit emphasizing the lowly "Mister" in his name, while several spontaneously addressed him as "Doctor" as they begged him for copies of the McSPAT (McIntosh's Splatter Pattern Apperception Test). His name had been mentioned in connection with the assistant directorship of the clinic where he was a humble psychologist. He also told how some of the state patients had taken to pommeling each other playfully while happily spouting some gibberish variant of the original phrase, such as *"Bump-biddy-biddy-bum-*BAH*-beel"* The resemblance in behavior to Tally's hepcats was noted and remarked on by the six intellectuals.

The first of Lester Phlegius' attention-getters (identical with the splatter, of course) had appeared and attracted the most favorable notice, meaning chiefly that his customer's front office had received at least a dozen curious phone calls from the directors and presidents of cognate firms. Lafcadio Smits reported that he had rented a second loft, was branching out into dress materials, silk neckties, lampshades and wallpaper, and was deep in royalty deals with several big manufacturers. Once again Simon Grue surprised him by not screaming robbery and demanding

details and large simple percentages. The accidental painter seemed even more unhappily abstracted than the week before.

When he ushered them from his living quarters into the studio they understood why.

It was as if the original big splatter had whelped. Surrounding and overlaying it were scores of smaller splatters. They were all colors of a well-chosen artist's-spectrum, blending with each other and pointing each other up superbly. But each and every one of them was a perfect copy, reduced to one half or less, of the original big splatter.

Lafcadio Smits wouldn't believe at first that Simon had done them free-wrist from the scaffold. Even when Simon showed him details proving they couldn't have been stenciled, Lafcadio was still unwilling to believe, for he was deeply versed in methods of mass-producing the appearance of handwork and spontaneity.

But when Simon wearily climbed the scaffold and, hardly looking at what he was doing, flipped down a few splatters exactly like the rest, even Lafcadio had to admit that something miraculous and frightening had happened to Simon's wrist.

Gorius James McIntosh shook his head and muttered a remark about "stereotyped compulsive behavior at the artistic-creative level. Never heard of it getting *that* stereotyped, though."

Later during the gathering, Norman Saylor again consulted with Simon and also had a long confidential talk with Tally B. Washington, during which he coaxed out of the drummer the whole story of his five-greats-grandfather. When questioned about his own researches, the cultural anthropologist would merely say that they were "progressing." He did, however, have one piece of concrete advice, which he delivered to all the five others just before the gathering broke up.

"This splatter does have an obsessive quality, just as Gory said. It has that maddening feeling of incompleteness which cries for repetition. It would be a good thing if each of us, whenever he feels the thing getting too strong

a hold on him, would instantly shift to some engrossing activity which has as little as possible to do with arbitrarily ordered sight and sound. Play chess or smell perfumes or eat candy or look at the moon through a telescope, or stare at a point of light in the dark and try to blank out your mind—something like that. Try to set up a countercompulsion. One of us might even hit on a counterformula—a specific antidote—like quinine for malaria."

If the ominous note of warning in Norman's statement didn't register on all of them just then, it did at some time during the next seven days, for the frame of mind in which the six intellectuals came to the gathering after the third week was one of paranoid grandeur and hysterical desperation.

Tally's TV appearance had been a huge success. He'd taken to the TV station a copy of the big splatter and although he hadn't intended to (he said) he'd found himself showing it to the M.C. and the unseen audience after his drum solo. The immediate response by phone, telegram and letter had been overwhelming but rather frightening, including a letter from a woman in Smallhills, Arkansas, thanking Tally for showing her "the wondrous picture of God."

Drum 'n' Drag had become a national and even international craze. The patty-cake greeting had become general among Tally's rapidly-growing horde of fans and it now included a staggering slap on the shoulder to mark the TAH. (Here Gorius McIntosh took a drink from his bottle and interrupted to tell of a spontaneous, rhythmic, lockstepping procession at the state hospital with an even more violent TAH-blow. The mad march had been forcibly broken up by attendants and two of the patients treated at the infirmary for contusions.) *The New York Times* ran a dispatch from South Africa describing how police had dispersed a disorderly mob of University of Capetown students who had been chanting, *"Shlump Shliddy Shliddy Shlump* SHLAH *Shleef"*—which the correspondents had been told was an anti-apartheid cry phrased in pig-Afrikaans.

For both the drummed phrase and the big splatter had

become a part of the news, either directly or by inferences that made Simon and his friends alternately cackle and shudder. An Indiana town was fighting a juvenile phenomenon called Drum Saturday. A radio-TV columnist noted that Blotto Cards were the latest rage among studio personnel; carried in handbag or breast pocket, whence they could be quickly whipped out and stared at, the cards were claimed to be an infallible remedy against boredom or sudden attacks of anger and the blues. Reports of a penthouse burglary included among the objects listed as missing "a recently-purchased spotted linen wall-hanging"; the woman said she did not care about the other objects, but pleaded for the hanging's return, "as it was of great psychological comfort to my husband." Splatter-marked raincoats were a high-school fad, the splattering being done ceremoniously at Drum 'n' Drag parties. An English prelate had preached a sermon inveighing against "this deafening new American craze with its pantherine overtones of mayhem." At a press interview Salvador Dali had refused to say anything to newsmen except the cryptic sentence, "The time has come."

In a halting, hiccupy voice Gorius McIntosh reported that things were pretty hot at the clinic. Twice during the past week he had been fired and triumpantly reinstated. Rather similarly at the state hospital Bump Parties had been alternately forbidden and then encouraged, mostly on the pleas of enthusiastic psychiatric aides. Copies of the McSPAT had come into the hands of general practitioners who, ignoring its original purpose, were using it as a substitute for electro-shock treatment and tranquilizing drugs. A group of progressive psychiatrists calling themselves the Young Turks were circulating a statement that the McSPAT constituted the worst threat to classical Freudian psychoanalysis since Alfred Adler, adding a grim scholarly reference to the Dancing Mania of the Middle Ages. Gorius finished his report by staring around almost frightenedly at his five friends and clutching the whisky bottle to his bosom.

Lafcadio Smits seemed equally shaken, even when telling about the profits of his pyramiding enterprises. One of

his four lofts had been burglarized and another invaded at high noon by a red-bearded Greenwich Village Satanist protesting that the splatter was an illicitly procured Taoist magic symbol of direst power. Lafcadio was also receiving anonymous threatening letters which he believed to be from a criminal drug syndicate that looked upon Blotto Cards as his creation and as competitive to heroin and lesser forms of dope. He shuddered visibly when Tally volunteered the information that his fans had taken to wearing Lafcadio's splatter-patterned ties and shirts.

Lester Phlegius said that further copies of the issue of the costly and staid industrial journal carrying his attention-getter were unprocurable and that many had vanished from private offices and wealthy homes or, more often, simply had the crucial page ripped out.

Norman Saylor's two photographs of the big splatter had been pilfered from his locked third-floor office at the university, and a huge copy of the splatter, painted in a waterproof black substance, had appeared on the bottom of the swimming pool in the girls' gymnasium.

As they continued to share their experiences, it turned out that the six intellectuals were even more disturbed at the hold the drummed phrase and the big splatter had got on them individually and at their failure to cope with the obsession by following Norman's suggestions. Playing at a Sunday-afternoon bar concert, Tally had got snagged on the phrase for fully ten minutes, like a phonograph needle caught in one groove, before he could let go. What bothered him especially was that no one in the audience had seemed to notice and he had the conviction that if something hadn't stopped him (the drum skin ruptured) they would have sat frozen there until, wrists flailing, he died of exhaustion.

Norman himself, seeking escape in chess, had checkmated his opponent in a blitz game (where each player must move without hesitation) by banging down his pieces in the *rump-titty* rhythm—and his subconscious mind had timed it, he said, so that the last move came right on the *tee;* it was a little pawn-move after a big queen-check on the TAH. Lafcadio, turning to cooking, had

found himself mixing salad with a *rump-titty* flourish. (". . . and a madman to mix it, as the old Spanish recipe says," he finished with a despairing giggle.) Lester Phlegius, seeking release from the obsession in the companionship of a lady spiritualist with whom he had been carrying on a strictly Platonic love affair for ten years, found himself enlivening with the *rump-titty* rhythm the one chaste embrace they permitted themselves to each meeting. Phoebe had torn herself away and slapped him full-arm across the face. What had horrified Lester was that the impact had coincided precisely with the TAH.

Simon Grue himself, who hadn't stirred out of his apartment all week but wandered shivering from window to window in a dirty old bathrobe, had dozed in a broken armchair and had a terrifying vision. He had imagined himself in the ruins of Manhattan, chained to the broken stones (before dozing off he had wound both wrists heavily with scarves and cloths to cushion the twitching), while across the dusty jagged landscape all humanity tramped in an endless horde screeching the accursed phrase and every so often came a group of them carrying a two-story-high poster (". . . like those Soviet parades," he said) with the big splatter staring blackly down from it. His nightmare had gone on to picture the dreadful infection spreading from the Earth by spaceship to planets revolving around other stars.

As Simon finished speaking, Gorius McIntosh rose slowly from his chair, groping ahead of himself with his whisky bottle.

"That's it!" he said from between bared clenched teeth, grinning horribly. "That's what's happening to all of us. Can't get it out of our minds. Can't get it out of our muscles. Psychosomatic bondage!" He stumbled slowly across the circle of intellectuals toward Lester, who was sitting opposite him. "It's happening to me. A patient sits down across the desk and says with his eyes dripping tears, 'Help me, Doctor McIntosh,' and I see his problems clearly and I know just how to help him and I get up and I go around the desk to him"—he was standing right over Lester now, bottle raised high above the industrial de-

signer's shoulder—"and I lean down so that my face is close to his and then I shout RUMP-TITTY-TITTY-TUM-TAH-TEE!"

At this point Norman Saylor decided to take over, leaving to Tally and Lafcadio the restraining of Gorius, who indeed seemed quite docile and more dazed than anything else now that his seizure was spent, at least temporarily. The cultural anthropologist strode to the center of the circle, looking very reassuring with his darkly billowing pipe and his strong jaw and his smoky tweeds, though he kept his hands clasped tightly together behind him, after snatching his pipe with one of them.

"Men," he said sharply, "my research on this thing isn't finished by a long shot, but I've carried it far enough to know that we are dealing with what may be called an ultimate symbol, a symbol that is the summation of all symbols. It has everything in it—birth, death, mating, murder, divine and demonic possession, all of life, the whole lot—to such a degree that after you've looked at it, or listened to it, or *made* it, for a time, you simply don't *need* life any more."

The studio was very quiet. The five other intellectuals looked at him. Norman rocked on his heels like any normal college professor, but his arms grew perceptibly more rigid as he clasped his hands even more tightly behind his back, fighting an exquisite compulsion.

"As I say, my studies aren't finished, but there's clearly no time to carry them further—we must act on such conclusions as I have drawn from the evidence assembled to date. Here's briefly how it shapes up: We must assume that mankind possesses an actual collective unconscious mind stretching thousands of years into the past and, for all I know, into the future. This collective unconscious mind may be pictured as a great dark space across which radio messages can sometimes pass with difficulty. We must also assume that the drummed phrase and with it the big splatter came to us by this inner radio from an individual living over a century in the past. We have good reason to believe that this individual is, or was, a direct male ancestor, in the seventh generation back, of Tally

here. He was a witch doctor. He was acutely hungry for power. In fact, he spent his life seeking an incantation that would put a spell on the whole world. It appears that he found the incantation at the end, but died too soon to be able to use it—without ever being able to embody it in sound or sign. Think of his frustration!"

"Norm's right," Tally said, nodding somberly. "He was a mighty mean man, I'm told, and mighty persistent."

Norman's nod was quicker and also a plea for undivided attention. Beads of sweat were dripping down his forehead. "The thing came to us when it did—came to Tally specifically and through him to Simon—because our six minds, reinforcing each other powerfully, were momentarily open to receive transmissions through the collective unconscious, and because there is—was—this sender at the other end long desirous of getting his message through to one of his descendants. We cannot say precisely where this sender is—a scientifically oriented person might say that he is in a shadowed portion of the space-time continuum while a religiously oriented person might aver that he is in Heaven or Hell."

"I'd plump for the last-mentioned," Tally volunteered. "He was that kind of man."

"Please, Tally," Norman said. "Wherever he is, we must operate on the hope that there is a counter formula or negative symbol—yang to this yin—which he wants, or wanted, to transmit too—something that will stop this flood of madness we have loosed on the world."

"That's where I must differ with you, Norm," Tally broke in, shaking his head more somberly than he had nodded it. "If Old Five-Greats ever managed to start something bad, he'd never want to stop it, especially if he knew how. I tell you he was mighty mighty mean and—"

"*Please, Tally!* Your ancestor's character may have changed with his new environment, there may be greater forces at work on him—in any case, our only hope is that he possesses and will transmit to us the counter formula. To achieve that, we must try to recreate, by artificial

means, the conditions that obtained in this studio at the time of the first transmission."

A look of acute pain crossed his face. He unclasped his hands and brought them in front of him. His pipe fell to the floor. He looked at the large blister the hot bowl had raised in one palm. Then clasping his hands together in front of him, palm to palm, with a twisting motion that made Lafcadio wince, he continued rapping out the words.

"Men, we must act at once, using only such materials as can be rapidly assembled. Each of you must trust me implicitly. Tally, I know you don't use it any more, but can you still get weed, the genuine crushed leaf? Good, we may need enough for two or three dozen sticks. Gory, I want you to fetch the self-hypnotism rigmarole that's so effective—no, I don't trust your memory and we may need copies. Lester, if you're quite through satisfying yourself that Gory didn't break your collarbone with his bottle, you go with Gory and see that he drinks lots of coffee. On your way back buy several bunches of garlic, a couple of rolls of dimes, and a dozen red railway flares. Oh yes, and call up your mediumistic lady and do your damnedest to get her to join us here—her talents may prove invaluable. Laf, tear off to your home loft and get the luminous paint and the black velvet hangings you and your red-bearded ex-friend used—yes, I know about that association!—when you and he were dabbling with black magic. Simon and I will hold down the studio. All right, then—" A spasm crossed his face and the veins in his forehead and cords in his neck bulged and his arms were jerking with the struggle he was waging against the compulsion that threatened to overpower him. "All right, then—*Rump-titty-titty-tum*-GET-MOVING!"

An hour later the studio smelt like a fire in a eucalyptus grove. Such light from outside as got past the cabalistically figured hangings covering windows and skylight revealed the shadowy forms of Simon, atop the scaffold, and the other five intellectuals, crouched against the wall, all puffing their reefers, sipping the sour smoke industriously.

Their marijuana-blanked minds were still reverberating to the last compelling words of Gory's rigmarole, read by Lester Phlegius in a sonorous bass.

Phoebe Saltonstall, who had refused reefers with a simple, "No thank you, I always carry my own peyote," had one wall all to herself. Eyes closed, she was lying along it on three small cushions, her pleated Grecian robe white as a winding sheet.

Round all four walls waist-high went a dimly luminous line with six obtuse angles in it besides the four corners; Norman said that made it the topological equivalent of a magician's pentalpha or pentagram. Barely visible were the bunches of garlic nailed to each door and the tiny silver disks scattered in front of them.

Norman flicked his lighter and the little blue flame added itself to the six glowing red points of the reefers. In a cracked voice he cried, "The time approaches!" and he shambled about rapidly setting fire to the twelve railway flares spiked into the floor through the big canvas.

In the hellish red glow they looked to each other like so many devils. Phoebe moaned and tossed. Simon coughed once as the dense clouds of smoke billowed up around the scaffold and filled the ceiling.

Norman Saylor cried, *"This is it!"*

Phoebe screamed thinly and arched her back as if in electroshock.

A look of sudden agonized amazement came into the face of Taliaferro Booker Washington, as if he'd been jabbed from below with a pin or hot poker. He lifted his hands with great authority and beat out a short phrase on his gray African log.

A hand holding a brightly-freighted eight-inch brush whipped out of the hellish smoke clouds above and sent down a great fissioning gout of paint that landed on the canvas with a sound that was an exact visual copy of Tally's short drummed phrase.

Immediately the studio became a hive of purposeful activity. Heavily-gloved hands jerked out the railway flares and plunged them into strategically located buckets

of water. The hangings were ripped down and the windows thrown open. Two electric fans were turned on. Simon, half-fainting, slipped down the last feet of the ladder, was rushed to a window and lay across it gasping. Somewhat more carefully Phoebe Saltonstall was carried to a second window and laid in front of it. Gory checked her pulse and gave a reassuring nod.

Then the five intellectuals gathered around the big canvas and stared. After a while Simon joined them.

The new splatter, in Chinese red, was entirely different from the many ones under it and it was an identical twin of the new drummed phrase.

After a while the six intellectuals went about the business of photographing it. They worked systematically but rather listlessly. When their eyes chanced to move to the canvas they didn't even seem to see what was there. Nor did they bother to glance at the black-on-white prints (with the background of the last splatter touched out) as they shoved them under their coats.

Just then there was a rustle of draperies by one of the open windows. Phoebe Saltonstall, long forgoten, was sitting up. She looked around her with some distaste.

"Take me home, Lester," she said faintly but precisely.

Tally, halfway through the door, stopped. "You know," he said puzzledly, "I still can't believe that Old Five-Greats had the public spirit to do what he did. I wonder if she found out what it was that made him—"

Norman put his hand on Tally's arm and laid a finger of the other on his own lips. They went out together, followed by Lafcadio, Gorius, Lester and Phoebe. Like Simon, all five men had the look of drunkards in a benign convalescent stupor, and probably dosed with paraldehyde, after a bout of DT's.

The same effect was apparent as the new splatter and drummed phrase branched out across the world, chasing and eventually overtaking the first one. Any person who saw or heard it proceeded to repeat it once (make it, show it, wear it, if it were that sort of thing, in any case pass it on) and then forget it—and at the same time forget

the first drummed phrase and splatter. All sense of compulsion or obsession vanished utterly.

Drum 'n' Drag died a-borning. Blotto Cards vanished from handbags and pockets, the MsSPATs I and II from doctors' offices and psychiatric clinics. Bump Parties no longer plagued and enlivened mental hospitals. Catatonics froze again. The Young Turks went back to denouncing tranquilizing drugs. A fad of green-and-purple barber-pole stripes covered up splattermarks on raincoats. Satanists and drug syndicates presumably continued their activities unhampered except by God and the Treasury Department. Capetown had such peace as it deserved. Spotted shirts, neckties, dresses, lampshades, wallpaper, and linen wall hangings all became intensely passé. Drum Saturday was never heard of again. Lester Phlegius' second attention-getter got none.

Simon's big painting was eventually hung at one exhibition, but it got little attention even from critics, except for a few heavy sentences along the lines of "Simon Grue's latest elephantine effort fell with a thud as dull as those of the gobs of paint that in falling composed it." Visitors to the gallery seemed able only to give it one dazed look and then pass it by, as is not infrequently the case with modern paintings.

The reason for this was clear. On top of all the other identical splatters it carried one in Chinese red that was a negation of all symbols, a symbol that had nothing in it—the new splatter that was the identical twin of the new drummed phrase that was the negation and completion of the first, the phrase that had vibrated out from Tally's log through the red glare and come slapping down out of Simon's smoke cloud, the phrase that stilled and ended everything (and which obviously can only be stated here once): "Tah-*titty-titty-tee*-toe!"

The six intellectual people continued their weekly meetings almost as if nothing had happened, except that Simon substituted for splatterwork a method of applying the paint by handfuls with the eyes closed, later treading it in by foot. He sometimes asked his friends to join him

in these impromptu marches, providing wooden shoes imported from Holland for the purpose.

One afternoon, several months later, Lester Phlegius brought a guest with him—Phoebe Saltonstall.

"Miss Saltonstall has been on a round-the-world cruise," he explained. "Her psyche was dangerously depleted by her experience in this apartment, she tells me, and a complete change was indicated. Happily now she's entirely recovered."

"Indeed I am," she said, answering their solicitous inquiries with a bright smile.

"By the way," Norman said, "at the time your psyche was depleted here, did you receive any message from Tally's ancestor?"

"Indeed I did," she said.

"Well, what did Old Five-Greats have to say?" Tally asked eagerly. "Whatever it was, I bet he was pretty crude about it!"

"Indeed he was," she said, blushing prettily. "So crude, in fact, that I wouldn't dare attempt to convey that aspect of his message. For that matter, I am sure that it was the utter fiendishness of his anger and the unspeakable visions in which his anger was clothed that so reduced my psyche." She paused.

"I don't know where he was sending from," she said thoughtfully. "I had the impression of a warm place, an intensely warm place, though of course I may have been reacting to the railway flares." Her frown cleared. "The actual message was short and simple enough:

" 'Dear Descendant, They *made* me stop it. It was beginning to catch on *down here.*' "

COMING ATTRACTION

THE coupe with the fishhooks welded to the fender shouldered up over the curb like the nose of a nightmare. The girl in its path stood frozen, her face probably stiff with fright under her mask. For once my reflexes weren't shy. I took a fast step toward her, grabbed her elbow, yanked her back. Her black skirt swirled out.

The big coupe shot by, its turbine humming. I glimpsed three faces. Something ripped. I felt the hot exhaust on my ankles as the big coupe swerved back into the street. A thick cloud like a black flower blossomed from its jouncing rear end, while from the fishhooks flew a black shimmering rag.

"Did they get you?" I asked the girl.

She had twisted around to look where the side of her skirt was torn away. She was wearing nylon tights.

"The hooks didn't touch me," she said shakily. "I guess I'm lucky."

I heard voices around us:

"Those kids! What'll they think up next?"

"They're a menace. They ought to be arrested."

Sirens screamed at a rising pitch as two motor-police, their rocket-assist jets full on, came whizzing toward us after the coupe. But the black flower had become an inky fog obscuring the whole street. The motor-police switched from rocket assists to rocket brakes and swerved to a stop near the smoke cloud.

"Are you English?" the girl asked me. "You have an English accent."

Her voice came shudderingly from behind the sleek black satin mask. I fancied her teeth must be chattering.

Eyes that were perhaps blue searched my face from behind the black gauze covering the eyeholes of the mask. I told her she'd guessed right. She stood close to me. "Will you come to my place tonight?" she asked rapidly. "I can't thank you now. And there's something else you can help me about."

My arm, still lightly circling her waist, felt her body trembling. I was answering the plea in that as much as in her voice when I said, "Certainly." She gave me an address south of Inferno, an apartment number and a time. She asked me my name and I told her.

"Hey, you!"

I turned obediently to the policeman's shout. He shooed away the small clucking crowd of masked women and barefaced men. Coughing from the smoke that the black coupe had thrown out, he asked for my papers. I handed him the essential ones.

He looked at them and then at me. "British Barter? How long will you be in New York?"

Suppressing the urge to say, "For as short a time as possible," I told him I'd be here for a week or so.

"May need you as a witness," he explained. "Those kids can't use smoke on us. When they do that, we pull them in."

He seemed to think the smoke was the bad thing. "They tried to kill the lady," I pointed out.

He shook his head wisely. "They always pretend they're going to, but actually they just want to snag skirts. I've picked up rippers with as many as fifty skirt-snags tacked up in their rooms. Of course, sometimes they come a little too close."

I explained that if I hadn't yanked her out of the way, she'd have been hit by more than hooks. But he interrupted, "If she'd thought it was a real murder attempt, she'd have stayed here."

I looked around. It was true. She was gone.

"She was fearfully frightened," I told him.

"Who wouldn't be? Those kids would have scared old Stalin himself."

"I mean frightened of more than 'kids.' They didn't look like 'kids.'"

"What did they look like?"

I tried without much success to describe the three faces. A vague impression of viciousness and effeminacy doesn't mean much.

"Well, I could be wrong," he said finally. "Do you know the girl? Where she lives?"

"No," I half lied.

The other policeman hung up his radiophone and ambled toward us, kicking at the tendrils of dissipating smoke. The black cloud no longer hid the dingy facades with their five-year-old radiation flash-burns, and I could begin to make out the distant stump of the Empire State Building, thrusting up out of Inferno like a mangled finger.

"They haven't been picked up so far," the approaching policeman grumbled. "Left smoke for five blocks, from what Ryan says."

The first policeman shook his head. "That's bad," he observed solemnly.

I was feeling a bit uneasy and ashamed. An Englishman shouldn't lie, at least not on impulse.

"They sound like nasty customers," the first policeman continued in the same grim tone. "We'll need witnesses. Looks as if you may have to stay in New York longer than you expect."

I got the point. I said, "I forgot to show you all my papers," and handed him a few others, making sure there was a five dollar bill in among them.

When he handed them back a bit later, his voice was no longer ominous. My feelings of guilt vanished. To cement our relationship, I chatted with the two of them about their job.

"I suppose the masks give you some trouble," I observed. "Over in England we've been reading about your new crop of masked female bandits."

"Those things get exaggerated," the first policeman assured me. "It's the men masking as women that really

mix us up. But, brother, when we nab them, we jump on them with both feet."

"And you get so you can spot women almost as well as if they had naked faces," the second policeman volunteered. "You know, hands and all that."

"Especially all that," the first agreed with a chuckle. "Say, is it true that some girls don't mask over in England?"

"A number of them have picked up the fashion," I told him. "Only a few, though—the ones who always adopt the latest style, however extreme."

"They're usually masked in the British newscasts."

"I imagine it's arranged that way out of deference to American taste," I confessed. "Actually, not very many do mask."

The second policeman considered that. "Girls going down the street bare from the neck up." It was not clear whether he viewed the prospect with relish or moral distaste. Likely both.

"A few members keep trying to persuade Parliament to enact a law forbidding all masking," I continued, talking perhaps a bit too much.

The second policeman shook his head. "What an idea. You know, masks are a pretty good thing, brother. Couple of years more and I'm going to make my wife wear hers around the house."

The first policeman shrugged. "If women were to stop wearing masks, in six weeks you wouldn't know the difference. You get used to anything, if enough people do or don't do it."

I agreed, rather regretfully, and left them. I turned north on Broadway (old Tenth Avenue, I believe) and walked rapidly until I was beyond Inferno. Passing such an area of undecontaminated radioactivity always makes a person queasy. I thanked God there weren't any such in England, as yet.

The street was almost empty, though I was accosted by a couple of beggars with faces tunneled by H-bomb scars, whether real or of makeup putty, I couldn't tell. A fat woman held out a baby with webbed fingers and toes. I

told myself it would have been deformed anyway and that she was only capitalizing on our fear of bomb-induced mutations. Still, I gave her a seven-and-a-half-cent piece. Her mask made me feel I was paying tribute to an African fetish.

"May all your children be blessed with one head and two eyes, sir."

"Thanks," I said, shuddering, and hurried past her.

". . . There's only trash behind the mask, so turn your head, stick to your task: Stay away, stay away—from—the —girls!"

This last was the end of an anti-sex song being sung by some religionists half a block from the circle-and-cross insignia of a femalist temple. They reminded me only faintly of our small tribe of British monastics. Above their heads was a jumble of billboards advertising predigested foods, wrestling instruction, radio handies and the like.

I stared at the hysterical slogans with disagreeable fascination. Since the female face and form have been banned on American signs, the very letters of the advertiser's alphabet have begun to crawl with sex—the fat-bellied, big-breasted capital B, the lascivious double O. However, I reminded myself, it is chiefly the mask that so strangely accents sex in America.

A British anthropologist has pointed out, that, while it took more than 5,000 years to shift the chief point of sexual interest from the hips to the breasts, the next transition to the face has taken less than 50 years. Comparing the American style with Moslem tradition is not valid; Moslem women are compelled to wear veils, the purpose of which is to make a husband's property private, while American women have only the compulsion of fashion and use masks to create mystery.

Theory aside, the actual origins of the trend are to be found in the anti-radiation clothing of World War III, which led to masked wrestling, now a fantastically popular sport, and that in turn led to the current female fashion. Only a wild style at first, masks quickly became as neces-

sary as brassieres and lipsticks had been earlier in the century.

I finally realized that I was not speculating about masks in general, but about what lay behind one in particular. That's the devil of the things; you're never sure whether a girl is heightening loveliness or hiding ugliness. I pictured a cool, pretty face in which fear showed only in widened eyes. Then I remembered her blonde hair, rich against the blackness of the satin mask. She'd told me to come at the twenty-second hour—ten p.m.

I climbed to my apartment near the British Consulate; the elevator shaft had been shoved out of plumb by an old blast, a nuisance in these tall New York buildings. Before it occurred to me that I would be going out again, I automatically tore a tab from the film strip under my shirt. I developed it just to be sure. It showed that the total radiation I'd taken that day was still within the safety limit. I'm no phobic about it, as so many people are these days, but there's no point in taking chances.

I flopped down on the day bed and stared at the silent speaker and the dark screen of the video set. As always, they made me think, somewhat bitterly, of the two great nations of the world. Mutilated by each other, yet still strong, they were crippled giants poisoning the planet with their respective dreams of an impossible equality and as impossible success.

I fretfully switched on the speaker. By luck, the newscaster was talking excitedly of the prospects of a bumper wheat crop, sown by planes across a dust bowl moistened by seeded rains. I listened carefully to the rest of the program (it was remarkably clear of Russian telejamming) but there was no further news of interest to me. And, of course, no mention of the Moon, though everyone knows that America and Russia are racing to develop their primary bases into fortresses capable of mutual assault and the launching of alphabet-bombs toward Earth. I myself knew perfectly well that the British electronic equipment I was helping trade for American wheat was destined for use in spaceships.

I switched off the newscast. It was growing dark and once again I pictured a tender, frightened face behind a mask. I hadn't had a date since England. It's exceedingly difficult to become acquainted with a girl in America, where as little as a smile, often, can set one of them yelping for the police—to say nothing of the increasingly puritanical morality and the roving gangs that keep most women indoors after dark. And naturally, the masks which are definitely not, as the Soviets claim, a last invention of capitalist degeneracy, but a sign of great psychological insecurity. The Russians have no masks, but they have their own signs of stress.

I went to the window and impatiently watched the darkness gather. I was getting very restless. After a while a ghostly violet cloud appeared to the south. My hair rose. Then I laughed. I had momentarily fancied it a radiation from the crater of the Hell-bomb, though I should instantly have known it was only the radio-induced glow in the sky over the amusement and residential area south of Inferno.

Promptly at twenty-two hours I stood before the door of my unknown girl friend's apartment. The electronic say-who-please said just that. I answered clearly, "Wysten Turner," wondering if she'd given my name to the mechanism. She evidently had, for the door opened. I walked into a small empty living room, my heart pounding a bit.

The room was expensively furnished with the latest pneumatic hassocks and sprawlers. There were some midgie books on the table. The one I picked up was the standard hard-boiled detective story in which two female murderers go gunning for each other.

The television was on. A masked girl in green was crooning a love song. Her right hand held something that blurred off into the foreground. I saw the set had a handie, which we haven't in England as yet, and curiously thrust my hand into the handie orifice beside the screen. Contrary to my expectations, it was not like slipping into a pulsing rubber glove, but rather as if the girl on the screen actually held my hand.

A door opened behind me. I jerked out my hand with

as guilty a reaction as if I'd been caught peering through a keyhole.

She stood in the bedroom doorway. I think she was trembling. She was wearing a gray fur coat, white-speckled, and a gray velvet evening mask with shirred gray lace around the eyes and mouth. Her fingernails twinkled like silver.

It hadn't occurred to me that she'd expect us to go out.

"I should have told you," she said softly. Her mask veered nervously toward the books and the screen and the room's dark corners. "But I can't possibly talk to you here."

I said doubtfully, "There's a place near the Consulate. . . ."

"I know where we can be together and talk," she said rapidly. "If you don't mind."

As we entered the elevator I said, "I'm afraid I dismissed the cab."

But the cab driver hadn't gone for some reason of his own. He jumped out and smirkingly held the front door open for us. I told him we preferred to sit in back. He sulkily opened the rear door, slammed it after us, jumped in front and slammed the door behind him.

My companion leaned forward. "Heaven," she said.

The driver switched on the turbine and televisor.

"Why did you ask if I were a British subject?" I said, to start the conversation.

She leaned away from me, tilting her mask close to the window. "See the Moon," she said in a quick, dreamy voice.

"But why, really?" I pressed, conscious of an irritation that had nothing to do with her.

"It's edging up into the purple of the sky."

"And what's your name?"

"The purple makes it look yellower."

Just then I became aware of the source of my irritation. It lay in the square of writhing light in the front of the cab beside the driver.

I don't object to ordinary wrestling matches, though they bore me, but I simply detest watching a man wrestle a woman. The fact that the bouts are generally "on the level," with the man greatly outclassed in weight and reach and the masked females young and personable, only makes them seem worse to me.

"Please turn off the screen," I requested the driver.

He shook his head without looking around. "Uh-uh, man," he said. "They've been grooming that babe for weeks for this bout with Little Zirk."

Infuriated, I reached forward, but my companion caught my arm. "Please," she whispered frightenedly, shaking her head.

I settled back, frustrated. She was closer to me now, but silent and for a few moments I watched the heaves and contortions of the powerful masked girl and her wiry masked opponent on the screen. His frantic scrambling at her reminded me of a male spider.

I jerked around, facing my companion. "Why did those three men want to kill you?" I asked sharply.

The eyeholes of her mask faced the screen. "Because they're jealous of me," she whispered.

"Why are they jealous?"

She still didn't look at me. "Because of him."

"Who?"

She didn't answer.

I put my arm around her shoulders. "Are you afraid to tell me?" I asked. "What *is* the matter?"

She still didn't look my way. She smelled nice.

"See here," I said laughingly, changing my tactics, "you really should tell me something about yourself. I don't even know what you look like."

I half playfully lifted my hand to the band of her neck. She gave it an astonishingly swift slap. I pulled it away in sudden pain. There were four tiny indentations on the back. From one of them a tiny bead of blood welled out as I watched. I looked at her silver fingernails and saw they were actually delicate and pointed metal caps.

"I'm dreadfully sorry," I heard her say, "but you frightened me. I thought for a moment you were going to. . . ."

At last she turned to me. Her coat had fallen open. Her evening dress was Cretan Revival, a bodice of lace beneath and supporting the breasts without covering them.

"Don't be angry," she said, putting her arms around my neck. "You were wonderful this afternoon."

The soft gray velvet of her mask, molding itself to her cheek, pressed mine. Through the mask's lace the wet warm tip of her tongue touched my chin.

"I'm not angry," I said. "Just puzzled and anxious to help."

The cab stopped. To either side were black windows bordered by spears of broken glass. The sickly purple light showed a few ragged figures slowly moving toward us.

The driver muttered, "It's the turbine, man. We're grounded." He sat there hunched and motionless. "Wish it had happened somewhere else."

My companion whispered, "Five dollars is the usual amount."

She looked out so shudderingly at the congregating figures that I suppressed my indignation and did as she suggested. The driver took the bill without a word. As he started up, he put his hand out the window and I heard a few coins clink on the pavement.

My companion came back into my arms, but her mask faced the television screen, where the tall girl had just pinned the convulsively kicking Little Zirk.

"I'm so frightened," she breathed.

Heaven turned out to be an equally ruinous neighborhood, but it had a club with an awning and a huge doorman uniformed like a spaceman, but in gaudy colors. In my sensuous daze I rather liked it all. We stepped out of the cab just as a drunken old woman came down the sidewalk, her mask awry. A couple ahead of us turned their heads from the half revealed face, as if from an ugly body at the beach. As we followed them in I heard the doorman say, "Get along, grandma, and cover yourself."

Inside, everything was dimness and blue glows. She had said we could talk here, but I didn't see how. Besides the

inevitable chorus of sneezes and coughs (they say America is fifty per cent allergic these days), there was a band going full blast in the latest robop style, in which an electronic composing machine selects an arbitrary sequence of tones into which the musicians weave their raucous little individualities.

Most of the people were in booths. The band was behind the bar. On a small platform beside them, a girl was dancing, stripped to her mask. The little cluster of men at the shadowy far end of the bar weren't looking at her.

We inspected the menu in gold script on the wall and pushed the buttons for breast of chicken, fried shrimps and two scotches. Moments later, the serving bell tinkled. I opened the gleaming panel and took out our drinks.

The cluster of men at the bar filed off toward the door, but first they stared around the room. My companion had just thrown back her coat. Their look lingered on our booth. I noticed that there were three of them.

The band chased off the dancing girl with growls. I handed my companion a straw and we sipped our drinks.

"You wanted me to help you about something," I said. "Incidentally, I think you're lovely."

She nodded quick thanks, looked around, leaned forward. "Would it be hard for me to get to England?"

"No," I replied, a bit taken aback. "Provided you have an American passport."

"Are they difficult to get?"

"Rather," I said, surprised at her lack of information. "Your country doesn't like its nationals to travel, though it isn't quite as stringent as Russia."

"Could the British Consulate help me get a passport?"

"It's hardly their. . . ."

"Could you?"

I realized we were being inspected. A man and two girls had paused opposite our table. The girls were tall and wolfish-looking, with spangled masks. The man stood jauntily between them like a fox on its hind legs.

My companion didn't glance at them, but she sat back.

I noticed that one of the girls had a big yellow bruise on her forearm. After a moment they walked to a booth in the deep shadows.

"Know them?" I asked. She didn't reply. I finished my drink. "I'm not sure you'd like England," I said. "The austerity's altogether different from your American brand of misery."

She leaned forward again. "But I must get away," she whispered.

"Why?" I was getting impatient.

"Because I'm so frightened."

There were chimes. I opened the panel and handed her the fried shrimps. The sauce on my breast of chicken was a delicious steaming compound of almonds, soy and ginger. But something must have been wrong with the radionic oven that had thawed and heated it, for at the first bite I crunched a kernel of ice in the meat. These delicate mechanisms need constant repair and there aren't enough mechanics.

I put down my fork. "What are you really scared of?" I asked her.

For once her mask didn't waver away from my face. As I waited I could feel the fears gathering without her naming them, tiny dark shapes swarming through the curved night outside, converging on the radioactive pest spot of New York, dipping into the margins of the purple. I felt a sudden rush of sympathy, a desire to protect the girl opposite me. The warm feeling added itself to the infatuation engendered in the cab.

"Everything," she said finally.

I nodded and touched her hand.

"I'm afraid of the Moon," she began, her voice going dreamy and brittle as it had in the cab. "You can't look at it and not think of guided bombs."

"It's the same Moon over England," I reminded her.

"But it's not England's Moon any more. It's ours and Russia's. You're not responsible."

"Oh, and then," she said with a tilt of her mask, "I'm afraid of the cars and the gangs and the loneliness and In-

ferno. I'm afraid of the lust that undresses your face. And—" her voice hushed—"I'm afraid of the wrestlers."

"Yes?" I prompted softly after a moment.

Her mask came forward. "Do you know something about the wrestlers?" she asked rapidly. "The ones that wrestle women, I mean. They often lose, you know. And then they have to have a girl to take their frustration out on. A girl who's soft and weak and terribly frightened. They need that, to keep them men. Other men don't want them to have a girl. Other men want them just to fight women and be heroes. But they must have a girl. It's horrible for her."

I squeezed her fingers tighter, as if courage could be transmitted—granting I had any. "I think I can get you to England," I said.

Shadows crawled onto the table and stayed there. I looked up at the three men who had been at the end of the bar. They were the men I had seen in the big coupe. They wore black sweaters and close-fitting black trousers. Their faces were as expressionless as dopers. Two of them stood about me. The other loomed over the girl.

"Drift off, man," I was told. I heard the other inform the girl: "We'll wrestle a fall, sister. What shall it be? Judo, slapsie or kill-who-can?"

I stood up. There are times when an Englishman simply must be maltreated. But just then the foxlike man came gliding in like the star of a ballet. The reaction of the other three startled me. They were acutely embarrassed.

He smiled at them thinly. "You won't win my favor by tricks like this," he said.

"Don't get the wrong idea, Zirk," one of them pleaded.

"I will if it's right," he said. "She told me what you tried to do this afternoon. That won't endear you to me, either. Drift."

They backed off awkwardly. "Let's get out of here," one of them said loudly, as they turned. "I know a place where they fight naked with knives."

Little Zirk laughed musically and slipped into the seat

beside my companion. She shrank from him, just a little. I pushed my feet back, leaned forward.

"Who's your friend, baby?" he asked, not looking at her.

She passed the question to me with a little gesture. I told him.

"British," he observed. "She's been asking you about getting out of the country? About passports?" He smiled pleasantly. "She likes to start running away. Don't you, baby?" His small hand began to stroke her wrist, the fingers bent a little, the tendons ridged, as if he were about to grab and twist.

"Look here," I said sharply. "I have to be grateful to you for ordering off those bullies, but—"

"Think nothing of it," he told me. "They're no harm except when they're behind steering wheels. A well-trained fourteen-year-old girl could cripple any one of them. Why, even Theda here, if she went in for that sort of thing. . . ." He turned to her, shifting his hand from her wrist to her hair. He stroked it, letting the strands slip slowly through his fingers. "You know I lost tonight, baby, don't you?" he said softly.

I stood up. "Come along," I said to her. "Let's leave."

She just sat there, I couldn't even tell if she was trembling. I tried to read a message in her eyes through the mask.

"I'll take you away," I said to her. "I can do it. I really will."

He smiled at me. "She'd like to go with you," he said. "Wouldn't you, baby?"

"Will you or won't you?" I said to her. She still just sat there.

He slowly knotted his fingers in her hair.

"Listen, you little vermin," I snapped at him. "Take your hands off her."

He came up from the seat like a snake. I'm no fighter. I just know that the more scared I am, the harder and straighter I hit. This time I was lucky. But as he crumpled back, I felt a slap and four stabs of pain in my cheek. I

clapped my hand to it. I could feel the four gashes made by her dagger finger caps, and the warm blood oozing out from them.

She didn't look at me. She was bending over little Zirk and cuddling her mask to his cheek and crooning: "There, there, don't feel bad, you'll be able to hurt me afterward."

There were sounds around us, but they didn't come close. I leaned forward and ripped the mask from her face.

I really don't know why I should have expected her face to be anything else. It was very pale, of course, and there weren't any cosmetics. I suppose there's no point in wearing any under a mask. The eyebrows were untidy and the lips chapped. But as for the general expression, as for the feelings crawling and wriggling across it—

Have you ever lifted a rock from damp soil? Have you ever watched the slimy white grubs?

I looked down at her, she up at me. "Yes, you're so frightened, aren't you?" I said sarcastically. "You dread this little nightly drama, don't you? You're scared to death."

And I walked right out into the purple night, still holding my hand to my bleeding cheek. No one stopped me, not even the girl wrestlers. I wished I could tear a tab from under my shirt, and test it then and there, and find I'd taken too much radiation, and so be able to ask to cross the Hudson and go down New Jersey, past the lingering radiance of the Narrows Bomb, and so on to Sandy Hook to wait for the rusty ship that would take me back over the seas to England.

NICE GIRL WITH FIVE HUSBANDS

TO be given paid-up leisure and find yourself unable to create is unpleasant for any artist. To be stranded in a cluster of desert cabins with a dozen lonely people in the same predicament only makes it worse. So Tom Dorset was understandably irked with himself and the Tosker-Brown Vacation Fellowships as he climbed with the sun into the valley of red stones. He accepted the chafing of his camera strap against his shoulder as the nagging of conscience. He agreed with the disparaging hisses of the grains of sand rutched by his sneakers, and he wished that the occasional breezes, which faintly echoed the same criticisms, could blow him into a friendlier, less jealous age.

He had no way of knowing that just as there are winds that blow through space, so there are winds that blow through time. Such winds may be strong or weak. The strong ones are rare and seldom blow for short distances, or more of us would know about them. What they pick up is almost always whirled far into the future or past.

This has happened to people. There was Ambrose Bierce, who walked out of America and existence, and there are thousands of others who have disappeared without a trace, though many of these may not have been caught up by time tornadoes and I do not know if a time gale blew across the deck of the *Marie Celeste.*

Sometimes a time wind is playful, snatching up an object, sporting with it for a season and then returning it unharmed to its original place. Sometimes we may be blown about by whimsical time winds without realizing it. Memory, for example, is a tiny time breeze, so weak that it can ripple only the mind.

A very few time winds are like the monsoon, blowing at fixed intervals first in one direction, then the other. Such a time wind blows near a balancing rock in a valley of red stones in the American Southwest. Every morning at ten o'clock, it blows a hundred years into the future; every afternoon at two, it blows a hundred years into the past.

Quite a number of people have unwittingly seen time winds in operation. There are misty spots on the sea's horizon and wavery patches over desert sands. There are mirages and will o' the wisps and ice blinks. And there are dust devils, such as Tom Dorset walked into near the balancing rock.

It seemed to him no more than a spiteful upgust of sand, against which he closed his eyes until the warm granules stopped peppering the lids. He opened them to see the balancing rock had silently fallen and lay a quarter buried—no, that couldn't be, he told himself instantly. He had been preoccupied; he must have passed the balancing rock and held its image in his mind.

Despite this rationalization he was quite shaken. The strap of his camera slipped slowly down his arm without his feeling it. And just then there stepped around the giant bobbin of the rock an extraordinarily pretty girl with hair the same pinkish copper color.

She was barefoot and wearing a pale blue playsuit rather like a Grecian tunic. But most important, as she stood there toeing his rough shadow in the sand, there was a complete naturalness about her, an absence of sharp edges, as if her personality had weathered without aging, just as the valley seemed to have taken another step toward eternity in the space of an instant.

She must have assumed something of the same gentleness in him, for her faint surprise faded and she asked him, as easily as if he were a friend, of five years' standing. "Tell now, do you think a woman can love just one man? All her life? And a man just one woman?"

Tom Dorset made a dazed sound.

His mind searched wildly.

"I do," she said, looking at him as calmly as at a mountain. "I think a man and woman can be each other's world, like Tristan and Isolde or Frederic and Catherine. Those old authors were wise. I don't see why on earth a girl has to spread her love around, no matter how enriching the experiences may be."

"You know, I agree with you," Tom said, thinking he'd caught her idea—it was impossible not to catch her casualness. "I think there's something cheap about the way everybody's supposed to run after sex these days."

"I don't mean that exactly. Tenderness is beautiful, but—" She pouted. "A big family can be vastly crushing. I wanted to declare today a holiday, but they outvoted me. Jock said it didn't chime with our mood cycles. But I was angry with them, so I put on my clothes—"

"Put on—?"

"To make it a holiday," she explained bafflingly. "And I walked here for a tantrum." She stepped out of Tom's shadow and hopped back. "Ow, the sand's getting hot," she said, rubbing the grains from the pale and uncramped toes.

"You go barefoot a lot?" Tom guessed.

"No, mostly digitals," she replied and took something shimmering from a pocket at her hip and drew it on her foot. It was a high-ankled, transparent mocassin with five separate toes. She zipped it shut with the speed of a card trick, then similarly gloved the other foot. Again the metal-edged slit down the front seemed to close itself.

"I'm behind on the fashions," Tom said, curious. They were walking side by side now, the way she'd come and he'd been going. "How does that zipper work?"

"Magnetic. They're on all my clothes. Very simple." She parted her tunic to the waist, then let it zip together.

"Clever," Tom remarked with a gulp. There seemed no limits to this girl's naturalness.

"I see you're a button man," she said. "You actually believe it's possible for a man and woman to love just each other?"

His chuckle was bitter. He was thinking of Elinore Murphy at Tosker-Brown and a bit about cold-faced Miss Tosker herself. "I sometimes wonder if it's possible for anyone to love anyone."

"You haven't met the right girls," she said.

"Girl," he corrected.

She grinned at him. "You'll make me think you really are a monogamist. What group do you come from?"

"Let's not talk about that," he requested. He was willing to forego knowing how she'd guessed he was from an art group, if he could be spared talking about the Vacation Fellowships and those nervous little cabins.

"My group's very nice on the whole," the girl said, "but at times they can be nefandously exasperating. Jock's the worst, quietly guiding the rest of us like an analyst. How I loathe that man! But Larry's almost as bad, with his shame-faced bumptiousness, as if we'd all sneaked off on a joyride to Venus. And there's Jokichi at the opposite extreme, forever scared he won't distribute his affection equally, dividing it up into mean little packets like candy for jealous children who would scream if they got one chewy less. And then there's Sasha and Ernest—"

"Who are you talking about?" Tom asked.

"My husbands." She shook her head dolefully. "To find five more difficult men would be positively Martian."

Tom's mind backtracked frantically, searching all conversations at Tosker-Brown for gossip about cultists in the neighborhood. It found nothing and embarked on a wider search. There were the Mormons (was that the word that had sounded like Martian?) but it wasn't the Mormon husbands who were plural. And then there was Oneida (weren't husbands and wives both plural there?) but that was 19th century New England.

"Five husbands?" he repeated. She nodded. He went on, "Do you mean to say five men have got you alone somewhere up here?"

"To be sure not," she replied. "There are my kwives."

"Kwives?"

"Co-wives," she said more slowly. "They can be fascinerously exasperating, too."

Tom's mind did some more searching. "And yet you believe in monogamy?"

She smiled. "Only when I'm having tantrums. It was civilized of you to agree with me."

"But I actually do believe in monogamy," he protested.

She gave his hand a little squeeze. "You are nice, but let's rush now. I've finished my tantrum and I want you to meet my group. You can fresh yourself with us."

As they hurried across the heated sands, Tom Dorset felt for the first time a twinge of uneasiness. There was something about this girl, more than her strange clothes and the odd words she used now and then, something almost —though ghosts don't wear digitals—spectral.

They scrambled up a little rise, digging their footgear into the sand, until they stood on a long flat. And there, serpentining around two great clumps of rock, was a many-windowed adobe ranch house with a roof like fresh soot.

"Oh, they've put on their clothes," his companion exclaimed with pleasure. "They've decided to make it a holiday after all."

Tom spotted a beard in the group swarming out to meet them. Its cultish look gave him a momentary feeling of superiority, followed by an equally momentary apprehension—the five husbands were certainly husky. Then both feelings were swallowed up in the swirl of introduction.

He told his own name, found that his companion's was Lois Wolver, then smiling faces began to bob toward his, his hands were shaken, his cheeks were kissed, he was even spun around like blind man's buff, so that he lost track of the husbands and failed to attach Mary, Rachel, Simone and Joyce to the right owners.

He did notice that Jokichi was an Oriental with a skin as tight as enameled china, and that Rachel was a tall slim Negro girl. Also someone said, "Joyce isn't a Wolver, she's just visiting."

He got a much clearer impression of the clothes than the names. They were colorful, costly-looking, and mostly Egyptian and Cretan in inspiration. Some of them would have been quite immodest, even compared to Miss Tos-

ker's famous playsuits, except that the wearers didn't seem to feel so.

"There goes the middle-morning rocket!" one of them eagerly cried.

Tom looked up with the rest, but his eyes caught the dazzling sun. However, he heard a faint roaring that quickly sank in volume and pitch, and it reminded him that the Army had a rocket testing range in this area. He had little interest in science, but he hadn't known they were on a daily schedule.

"Do you suppose it's off the track?" he asked axiously.

"Not a chance," someone told him—the beard, he thought. The assurance of the tones gave him a possible solution. Scientists came from all over the world these days and might have all sorts of advanced ideas. This could be a group working at a nearby atomic project and leading its peculiar private life on the side.

As they eddied toward the house he heard Lois remind someone, "But you finally did declare it a holiday," and a husband who looked like a gay pharaoh respond, "I had another see at the mood charts and I found a subtle surge I'd missed."

Meanwhile the beard (a black one) had taken Tom in charge. Tom wasn't sure of his name, but he had a tan skin, a green sarong, and a fiercely jovial expression. "The swimming pool's around there, the landing spot's on the other side," he began, then noticed Tom gazing at the sooty roof. "Sun power cells," he explained proudly. "They store all the current we need."

Tom felt his idea confirmed. "Wonder you don't use atomic power," he observed lightly.

The beard nodded. "We've been asked that. Matter of esthetics. Why waste sunlight or use hard radiations needlessly? Of course, you might feel differently. What's your group, did you say?"

"Tosker-Brown," Tom told him, adding when the beard frowned, "the Fellowship people, you know."

"I don't," the beard confessed. "Where are you located?"

Tom briefly described the ranch house and cabins at the other end of the valley.

"Comic, I can't place it." The beard shrugged. "Here come the children."

A dozen naked youngsters raced around the ranch house, followed by a woman in a vaguely African dress open down the sides.

"Yours?" Tom asked.

"Ours," the beard answered.

"C'est un homme!"

"Regardez des vêtements!"

"No need to practice, kids; this is a holiday," the beard told them. "Tom, Helen," he said, introducing the woman with the air-conditioned garment. "Her turn today to companion die Kinder."

One of the latter rapped on the beard's knee. "May we show the stranger our things?" Instantly the others joined in pleading. The beard shot an inquiring glance at Tom, who nodded. A moment later the small troupe was hurrying him toward a spacious lean-to at the end of the ranch house. It was chuckful of strange toys, rocks and plants, small animals in cages and out, and the oddest model airplanes, or submarines. But Tom was given no time to look at any one thing for long.

"See my crystals? I grew them."

"Smell my mutated gardenias. Tell now, isn't there a difference?" There didn't seeem to be, but he nodded.

"Look at my squabbits." This referred to some long-eared white squirrels nibbling carrots and nuts.

"Here's my newest model spaceship, a DS-57-B. Notice the detail." The oldest boy shoved one of the submarine affairs in his face.

Tom felt like a figure that is being tugged about in a rococo painting by wide pink ribbons in the chubby hands of naked cherubs. Except that these cherubs were slim and tanned, fantastically energetic, and apparently of depressingly high IQ. (What these scientists did to children!) He missed Lois and was grateful for the single

little girl solemnly skipping rope in a corner and paying no attention to him.

The odd lingo she repeated stuck in his mind: "Gik-lo, I-o, Rik-o, Gis-so. Gik-lo, I-o . . ."

Suddenly the air was filled with soft chimes. "Lunch," the children shouted and ran away.

Tom followed at a soberer pace along the wall of the ranch house. He glanced in the huge windows, curious about the living and sleeping arrangements of the Wolvers, but the panes were strangely darkened. Then he entered the wide doorway through which the children had scampered and his curiosity turned to wonder.

A resilient green floor that wasn't flat, but sloped up toward the white of the far wall like a breaking wave. Chairs like giants' hands tenderly cupped. Little tables growing like mushrooms and broadleafed plants out of the green floor. A vast picture window showing the red rocks.

Yet it was the wood-paneled walls that electrified his artistic interest. They blossomed with fruits and flowers, deep and poignantly carved in several styles. He had never seen such work.

He became aware of a silence and realized that his hosts and hostesses were smiling at him from around a long table. Moved by a sudden humility, he knelt and unlaced his sneakers and added them to the pile of sandals and digitals by the door. As he rose, a soft and comic piping started and he realized that beyond the table the children were lined up, solemnly puffing at little wooden flutes and recorders. He saw the empty chair at the table and went toward it, conscious for the moment of nothing but his dusty feet.

He was disappointed that Lois wasn't sitting next to him, but the food reminded him that he was hungry. There was a charming little steak, striped black and brown with perfection, and all sorts of vegetables and fruits, one or two of which he didn't recognize.

"Flown from Africa," someone explained to him.

These sly scientists, he thought, living behind their security curtain in the most improbable world!

When they were sitting with coffee and wine, and the children had finished their concert and were busy at another table, he asked, "How do you manage all this?"

Jock, the gay pharaoh, shrugged. "It's not difficult."

Rachel, the slim Negro, chuckled in her throat. "We're just people, Tom."

He tried to phrase his question without mentioning money. "What do you all do?"

"Jock's a uranium miner," Larry (the beard) answered, briskly taking over. "Rachel's an algae farmer. I'm a rocket pilot. Lois—"

Although pleased at this final confirmation of his guess, Tom couldn't help feeling a surge of uneasiness. "Sure you should be telling me these things?"

Larry laughed. "Why not? Lois and Jokichi have been exchange-workers in China the last six months."

"Mostly digging ditches," Jokichi put in with a smile.

"—and Sasha's in an assembly plant. Helen's a psychiatrist. Oh, we just do ordinary things. Now we're on grand vacation."

"When all of us have a vacation together," Larry explained. "What do you do?"

"I'm an artist," Tom said, taking out a cigaret.

"But what else?" Larry asked.

Tom felt an angry embarrassment. "Just an artist," he mumbled, cigaret in mouth, digging in his pockets for a match.

"Hold on," said Joyce beside him and pointed a silver pencil at the tip of the cigaret. He felt a faint thrill in his lips and then started back, coughing. The cigaret was lighted.

"Please mutate my poppy seeds, Mommy." A little girl had darted to Joyce from the children's table.

"You're a very dirty little girl," Joyce told her without reproof. "Hold them out." She briefly directed the silver pencil at the clay pellets on the grimy little palm. The little girl shivered delightedly. "I love ultrasonics, they feel so funny." She scampered off.

Tom cleared his throat. "I must say I'm tremendously

impressed with the wood carvings. I'd like to photograph them. Oh, Lord!"

"What's the matter?" Rachel asked.

"I lost my camera somewhere."

"Camera?" Jokichi showed interest. "You mean one for stills?"

"Yes."

"What kind?"

"A Leica," Tom told him.

Jokichi seemed impressed. "That is interesting. I've never seen one of those old ones."

"Tom's a button man," Lois remarked by way of explanation, apparently. "Was the camera in a brown case? You dropped it where we met. We can get it later."

"Good, I'd really like to take those pictures," Tom said. "Incidentally, who did the carvings?"

"We did," Jock said. "Together."

Tom was grateful that the scamper of the children out of the room saved him from having to reply. He couldn't think of anything but a grunt of astonishment.

The conversation split into a group of chats about something called a psych machine, trips to Russia, the planet Mars, and several artists Tom had never heard of. He wanted to talk to Lois, but she was one of the group gabbling about Mars like children. He felt suddenly uneasy and out of things, and neither Rachel's deprecating remarks about her section of the wood carvings nor Joyce's interesting smiles helped much. He was glad when they all began to get up. He wandered outside and made his way to the children's lean-to, feeling very depressed.

Once again he was the center of a friendly naked cluster, except for the same solemn-faced little girl skipping rope. A rather malicious but not very hopeful whim prompted him to ask the youngest, "What's one and one?"

"Ten," the shaver answered glibly. Tom felt pleased.

"It could also be two," the oldest boy remarked.

"I'll say," Tom agreed. "What's the population of the world?"

"About seven hundred million."

Tom nodded noncommittally and, grabbing at the first long word that he thought of, turned to the eldest girl. "What's poliomyelitis?"

"Never heard of it," she said.

The solemn little girl kept droning the same ridiculous chant: "Gik-lo, I-o, Rik-o, Gis-so."

His ego eased, Tom went outside and there was Lois.

"What's the matter?" she asked.

"Nothing," he said.

She took his hand. "Have we pushed ourselves at you too much? Has our jabbering bothered you? We're a loud-mouthed family and I didn't think to ask if you were loning."

"Loning?"

"Solituding."

"In a way," he said. They didn't speak for a moment. Then, "Are you happy, Lois, in your life here?" he asked.

Her smile was instant. "Of course. Don't you like my group?"

He hesitated. "They make me feel rather no good," he said, and then admitted, "but in a way I'm more attracted to them than any people I've ever met."

"You are?" Her grip on his hand tightened. "Then why don't you stay with us for a while? I like you. It's too early to propose anything, but I think you have a quality our group lacks. You could see how you fit in. And there's Joyce. She's just visiting, too. You wouldn't have to lone unless you wanted."

Before he could think, there was a rhythmic rush of feet and the Wolvers were around them.

"We're swimming," Simone announced.

Lois looked at Tom inquiringly. He smiled his willingness, started to mention he didn't have trunks, then realized that wouldn't be news here. He wondered whether he would blush.

Jock fell in beside him as they rounded the ranch house. "Larry's been telling me about your group at the other end of the valley. It's comic, but I've whirled down the

valley a dozen times and never spotted any sort of place there. What's it like?"

"A ranch house and several cabins."

Jock frowned. "Comic I never saw it." His face cleared. "How about whirling over there? You could point it out to me."

"It's really there," Tom said uneasily. "I'm not making it up."

"Of course," Jock assured him. "It was just an idea."

"We could pick up your camera on the way," Lois put in.

The rest of the group had turned back from the huge oval pool and the dark blue and flashing thing beyond it, and stood gay-colored against the pool's pale blue shimmer.

"How about it?" Jock asked them. "A whirl before we bathe?"

Two or three said yes besides Lois, and Jock led the way toward the helicopter that Tom now saw standing beyond the pool, its beetle body as blue as a scarab, its vanes flashing silver.

The others piled in. Tom followed as casually as he could, trying to suppress the pounding of his heart. "Wonder you don't go by rocket," he remarked lightly.

Jock laughed. "For such a short trip?"

The vanes began to thrum. Tom sat stiffly, gripping the sides of the seat, then realized that the others had sunk back lazily in the cushions. There was a moment of strain and they were falling ahead and up. Looking out the side, Tom saw for a moment the sooty roof of the ranch house and the blue of the pool and the pinkish umber of tanned bodies. Then the helicopter lurched gently around. Without warning a miserable uneasiness gripped him, a desire to cling mixed with an urge to escape. He tried to convince himself it was fear of the height.

He heard Lois tell Jock, "That's the place, down by that rock that looks like a wrecked spaceship."

The helicopter began to fall forward. Tom felt Lois' hand on his.

"You haven't answered my question," she said.

"What?" he asked dully.

"Whether you'll stay with us. At least for a while."

He looked at her. Her smile was a comfort. He said, "If I possibly can."

"What could possibly stop you?"

"I don't know," he answered abstractedly.

"You're strange," Lois told him. "There's a weight of sadness in you. As if you lived in a less happy age. As if it weren't 2050."

"Twenty?" he repeated, awakening from his thoughts with a jerk. "What's the time?" he asked anxiously.

"Two," Jock said. The word sounded like a knell.

"You need cheering," Lois announced firmly.

Amid a whoosh of air rebounding from earth, they jounced gently down. Lois vaulted out. "Come on," she said.

Tom followed her. "Where?" he asked stupidly, looking around at the red rocks through the settling sand cloud stirred by the vanes.

"Your camera," she told him, laughing. "Over there. Come on, I'll race you."

He started to run with her and then his uneasiness got beyond his control. He ran faster and faster. He saw Lois catch her foot on a rock and go down sprawling, but he couldn't stop. He ran desperately around the rock and into a gust of up-whirling sand that terrified him with its suddenness. He tried to escape from the stinging, blinding gust, but there was the nightmarish fright that his wild strides were carrying him nowhere.

Then the sand settled. He stopped running and looked around him. He was standing by the balancing rock. He was gasping. At his feet the rusty brown leather of the camera case peeped from the sand. Lois was nowhere in sight. Neither was the helicopter. The valley seemed different, rawer—one might almost have said younger.

Hours after dark he trailed into Tosker-Brown. Curtained lights still glowed from a few cabins. He was footsore, bewildered, frightened. All afternoon and through the twlight and into the moonlit evening that turned the

red rocks black, he had searched the valley. Nowhere had he been able to find the sootroofed ranch house of the Wolvers. He hadn't even been able to locate the rock like a giant bobbin where he'd met Lois.

During the next days he often returned to the valley. But he never found anything. And he never happened to be near the balancing rock when the time winds blew at ten and two, though once or twice he did see dust devils. Then he went away and eventually forgot.

In his casual reading he ran across popular science articles describing the binary system of numbers used in electronic calculating machines, where one and one make ten. He always skipped them. And more than once he saw the four equations expressing Einstein's generalized theory of gravitation:

He never connected them with the little girl's chant: "Gik-lo, I-o, Rik-o, Gis-so."

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